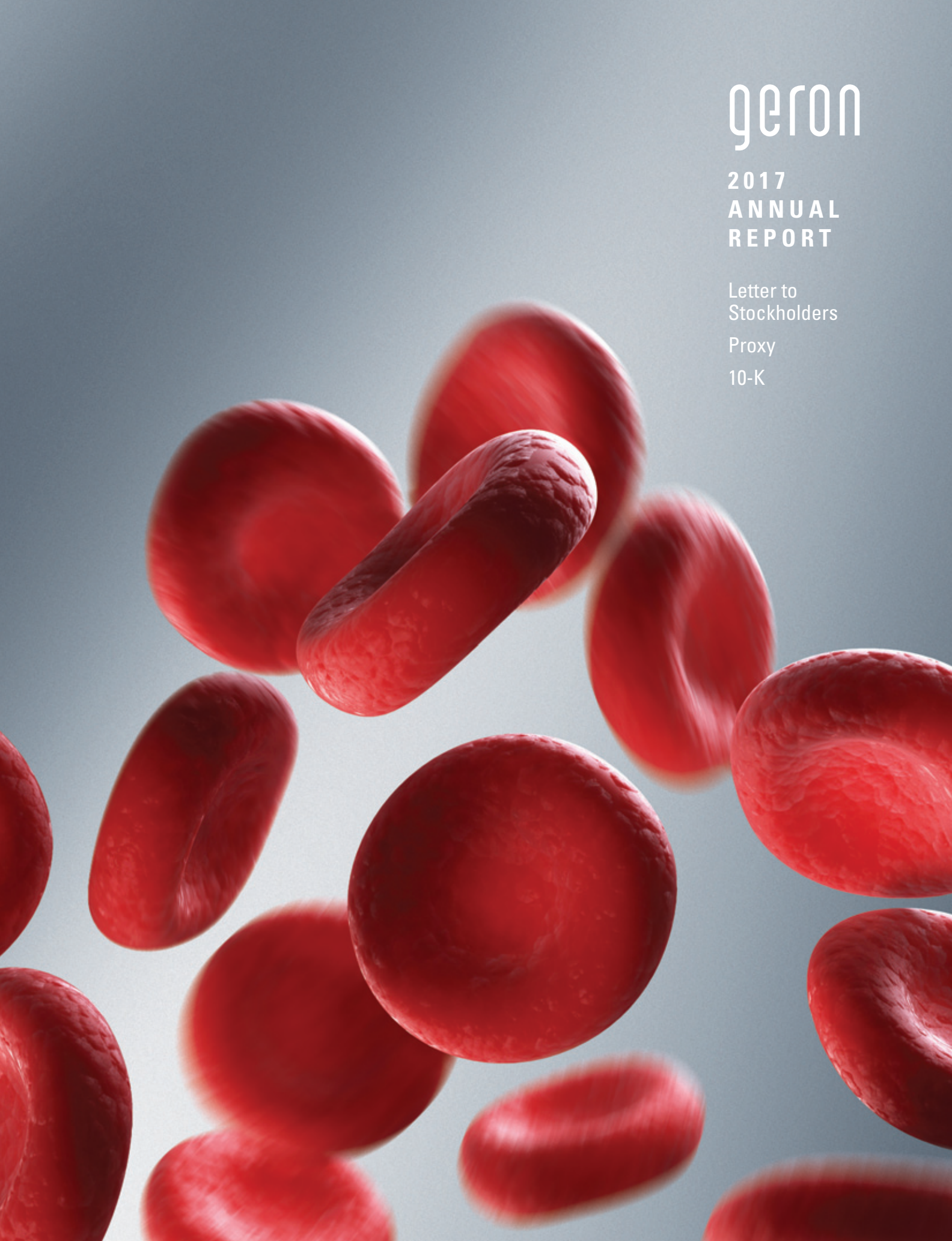


geron

2017 ANNUAL REPORT

Letter to Stockholders

Proxy

10-K

Dear Geron Stockholder,

Throughout 2017, ongoing treatment and follow up of patients in IMbark and IMerge, the two clinical trials of imetelstat being conducted by our partner Janssen Biotech, have added to our understanding of the potential treatment settings for the drug, setting the stage for important events to occur in 2018.

In IMbark, the patient population in which imetelstat is being tested clearly needs new therapies. The Phase 2 trial is evaluating imetelstat in intermediate-2 or high-risk myelofibrosis (MF) patients who are refractory to or have relapsed after treatment with a JAK inhibitor. Only one drug, a JAK inhibitor, is currently approved for MF, and once patients fail or discontinue this treatment, median overall survival is approximately seven to 16 months. Thus, imetelstat could potentially address a significant unmet medical need if its use is associated with meaningfully longer survival.

Patients who remain in the treatment phase of IMbark may continue to receive imetelstat, and to the extent possible, are being followed until death to enable an assessment of overall survival. As of the latest January 2018 data cut in which patients in both imetelstat treatment arms of the study had been followed for approximately 19 months, the median overall survival has not been reached for patients in either arm of the study. In March 2018, IMbark was officially closed to new patient enrollment and an extension phase of the trial is being established to allow continued treatment and follow-up of patients who are benefitting from imetelstat, including for survival.

Based on the rate of deaths occurring in IMbark, our partner Janssen will begin the protocol-specified primary analysis of the trial, which includes an assessment of overall survival, by the end of the second quarter of 2018. After this analysis is completed, Janssen must decide whether to continue development of imetelstat (Continuation Decision). We expect Janssen to make its Continuation Decision by the end of the third quarter of 2018.

Although completing the protocol-specified primary analysis of IMbark is the trigger for the Continuation Decision by Janssen, we expect data from Part 1 of IMerge, the two-part Phase 2/3 trial of imetelstat in patients with lower risk myelodysplastic syndromes (MDS) to contribute important information about imetelstat. Notably, preliminary data from the first 32 patients in the Phase 2 component of IMerge, presented in December at the American Society of Hematology annual meeting, support our hypothesis from previous clinical trials that imetelstat may have the potential to suppress the proliferation of malignant progenitor cell clones to allow the recovery of normal hematopoiesis in patients with hematologic malignancies.

These preliminary data from IMerge showed that treatment with imetelstat reduced the frequency and number of transfusions needed by most lower risk MDS patients in the trial. Because the MDS patients enrolled in IMerge suffered from anemia and were heavily dependent on red blood cell transfusions, being able to become independent of transfusions for as long as possible, or reducing the frequency of their transfusions, significantly improves their quality of life.

In particular, a subset of 13 patients in IMerge, who had not received prior treatment with either a hypomethylating agent or the immunomodulatory agent lenalidomide, and who did not have a chromosomal abnormality known as del(5q), exhibited an increased rate and durability of transfusion independence in comparison to the overall trial population. For example, the proportion of patients with transfusion-free periods lasting at least 8-weeks for the overall trial population of 32 patients in IMerge was 38% and for the 13-patient subset it was 54%. The proportion of patients with transfusion-free periods lasting at least 24-weeks for the overall trial population was 16% and for the 13-patient subset it was 31%. These were impressive efficacy outcomes.

Based on these preliminary data, Janssen has now enrolled approximately 20 additional patients who were naïve to treatment with lenalidomide and hypomethylating agents and were not del(5q) to increase the experience and confirm the preliminary efficacy and safety of imetelstat in this refined target population of lower risk MDS patients. Enrollment of these additional patients occurred faster than anticipated, highlighting both the unmet need in this patient population and the keen interest in imetelstat among clinical investigators. We believe Janssen will need the results from these new patients before deciding whether to make a positive Continuation Decision and start the Phase 3 component of IMerge.

I would like to thank our stockholders for supporting Geron over the years. We look forward to the outcomes in this important upcoming year.

Sincerely,

John A. Scarlett, M.D.
President and Chief Executive Officer

For important information regarding the use of forward-looking statements in this letter to stockholders, please refer to the inside back cover of this annual report.

Use of Forward-Looking Statements

Except for the historical information contained herein, this annual report and letter to stockholders contain forward-looking statements made pursuant to the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. Investors are cautioned that statements in this annual report and letter to stockholders regarding: (i) continued conduct by Janssen of IMbark and/or IMerge and any future clinical trials of imetelstat; (ii) the expected, anticipated and uncertain occurrence, if any, and timing of: (a) any data reviews, (b) a primary analysis, (c) any outcomes or decisions by Janssen regarding IMbark or IMerge, and (d) a positive or negative Continuation Decision by Janssen; (iii) that imetelstat has the potential to suppress the proliferation of malignant progenitor cell clones to allow the recovery of normal hematopoiesis in patients with hematologic malignancies; (iv) the safety and efficacy of imetelstat; and (v) other statements that are not historical facts, constitute forward-looking statements. These statements involve risks and uncertainties that can cause actual results to differ materially from those in such forward-looking statements. These risks and uncertainties, include, without limitation, the following risks and uncertainties: (i) whether imetelstat will succeed in IMbark and IMerge by overcoming all of the clinical safety and efficacy, technical, scientific, manufacturing and regulatory challenges; (ii) the FDA or other health authorities may have additional requirements for and/or permit IMbark or IMerge to continue to proceed under the existing protocols or any amendments thereto; (iii) whether Janssen chooses to conduct data reviews of IMbark or IMerge; (iv) whether Janssen continues to conduct IMbark or IMerge or decides not to perform a primary analysis for IMbark; (v) Janssen may terminate the Collaboration Agreement at any time or otherwise fail to successfully develop and commercialize imetelstat and in a timely manner, or at all, so that Geron would not obtain the anticipated financial and other benefits of the Collaboration Agreement with Janssen and the clinical development or commercialization of imetelstat could be delayed or terminated; (vi) whether imetelstat is safe and efficacious, and whether any future efficacy or safety results may cause the benefit/risk profile of imetelstat to become unacceptable; (vii) whether Janssen will make a positive Continuation Decision without renegotiating the terms of the Collaboration Agreement; (viii) Geron may not receive any or limited milestone, royalty or other payments from Janssen because Janssen may terminate the Collaboration Agreement for any reason or because imetelstat is unsuccessful developmentally or commercially; (ix) Geron and Janssen may not be able to protect and maintain intellectual property rights for imetelstat; (x) Geron's need for future capital; and (xi) whether Geron is able to acquire any new product candidates, programs or companies to enable it to diversify. Additional information on the above risks and uncertainties and additional risks, uncertainties and factors that could cause actual results to differ materially from those in the forward-looking statements are contained in Geron's periodic reports filed with the Securities and Exchange Commission under the heading "Risk Factors," including Geron's annual report on Form 10-K for the year ended December 31, 2017. Undue reliance should not be placed on forward-looking statements, which speak only as of the date they are made, and the facts and assumptions underlying the forward-looking statements may change. Except as required by law, Geron disclaims any obligation to update these forward-looking statements to reflect future information, events or circumstances.

Corporate Information

Board of Directors

Hoyoung Huh, M.D., PH.D.
Chairman of the Board

Daniel M. Bradbury

Karin Eastham

V. Bryan Lawlis, PH.D.

Susan M. Molineaux, PH.D.

John A. Scarlett, M.D.

Robert J. Spiegel, M.D., FACP

Stock Listing

Geron Corporation
common stock trades on
The Nasdaq Global Select Market
under the ticker symbol
GERN

Officers

John A. Scarlett, M.D.
President
and Chief Executive Officer

Olivia K. Bloom
Executive Vice President,
Finance, Chief Financial Officer
and Treasurer

Melissa A. Kelly Behrs
Executive Vice President,
Business Development
and Portfolio & Alliance Management

Andrew J. Grethlein, PH.D.
Executive Vice President,
Development
and Technical Operations

Stephen N. Rosenfield, J.D.
Executive Vice President,
General Counsel
and Corporate Secretary

Investor Relations

Anna Krassowska, PH.D.
(650) 473-7765 – tel
investor@geron.com – email

Transfer Agent & Registrar

Computershare
P.O. Box 505000
Louisville, KY 40233
(800) 962-4284 – tel

Independent Auditors

Ernst & Young LLP
275 Shoreline Drive
Suite 600
Redwood City, CA 94065

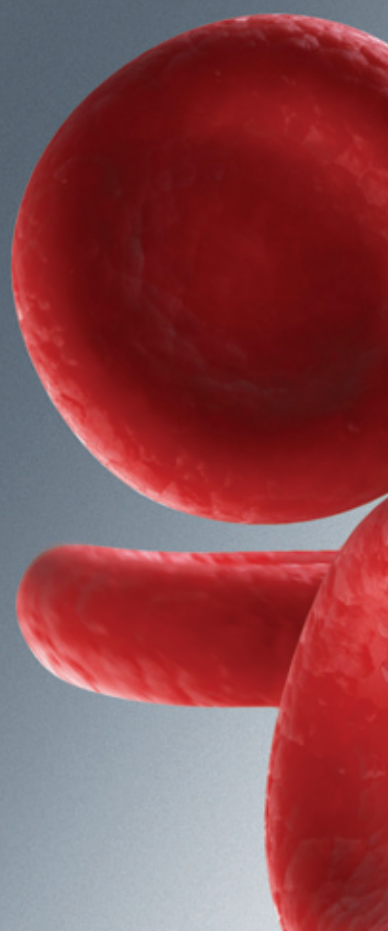
Legal Counsel

Cooley LLP
3175 Hanover Street
Palo Alto, CA 94304

geron

Geron Corporation
149 Commonwealth Drive
Menlo Park, CA 94025

(650) 473-7700 – tel
(650) 473-7750 – fax
info@geron.com – email
www.geron.com



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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the Fiscal Year Ended December 31, 2017

or

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

For the transition period from _____ to _____ .

Commission File Number: 0-20859

GERON CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**75-2287752**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
149 Commonwealth Drive, Suite 2070, Menlo Park, CA	**94025**
(Address of principal executive offices)	**(Zip Code)**

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

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

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

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant was approximately $438,713,000 based upon the closing price of the registrant's common stock on June 30, 2017 on the Nasdaq Global Select Market. The calculation of the aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant excludes shares of common stock held by each officer, director and stockholder that the registrant concluded were affiliates on that date. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 7, 2018, there were 160,654,027 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Document	**Form 10-K Parts**
Portions of the Registrant's definitive proxy statement for the 2018 annual meeting of stockholders to be filed pursuant to Regulation 14A within 120 days of the Registrant's fiscal year ended December 31, 2017	III

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In this report, unless otherwise indicated or the context otherwise requires, "Geron," "the registrant," "we," "us," and "our" refer to Geron Corporation, a Delaware corporation.

Forward-Looking Statements

This annual report on Form 10-K, including "Business" in Part I, Item 1 and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7, contains forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause the results of Geron Corporation, or Geron or the Company, to differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. In some cases, forward-looking statements can be identified by the use of terminology such as "may," "expects," "plans," "intends," "will," "should," "projects," "believes," "predicts," "anticipates," "estimates," "potential," or "continue" or the negative thereof or other comparable terminology. The risks and uncertainties referred to above include, without limitation, risks related to our dependence on Janssen Biotech, Inc., or Janssen, for the development, regulatory approval, manufacture and commercialization of imetelstat, uncertainty of clinical trial results or regulatory approvals or clearances, the future development of imetelstat, including any future efficacy or safety results that cause the benefit-risk profile of imetelstat to become unacceptable, our ability to identify and acquire and/or in-license other oncology products, product candidates, programs or companies to grow and diversify our business, our need for additional capital to support the development and commercialization of imetelstat in collaboration with Janssen and to otherwise grow our business, enforcement of our patent and proprietary rights, potential competition and other risks that are described herein and that are otherwise described from time to time in our Securities and Exchange Commission reports including, but not limited to, the factors described in Part I, Item 1A, "Risk Factors," of this annual report on Form 10-K. Geron assumes no obligation for and except as required by law, disclaims any obligation to update these forward-looking statements to reflect future information, events or circumstances.

Calculation of Aggregate Market Value of Non-Affiliate Shares

For purposes of calculating the aggregate market value of shares of our common stock held by non-affiliates as set forth on the cover page of this annual report on Form 10-K, we have assumed that all outstanding shares are held by non-affiliates, except for shares held by each of our executive officers, directors and 5% or greater stockholders. In the case of 5% or greater stockholders, we have not deemed such stockholders to be affiliates unless there are facts and circumstances which would indicate that such stockholders exercise any control over our Company. These assumptions should not be deemed to constitute an admission that all executive officers, directors and 5% or greater stockholders are, in fact, affiliates of our Company, or that there are no other persons who may be deemed to be affiliates of our Company. Further information concerning shareholdings of our executive officers, directors and principal stockholders is incorporated by reference in Part III, Item 12 of this annual report on Form 10-K.

PART I

ITEM 1. BUSINESS

Company Overview

We are a biopharmaceutical company that currently supports the clinical stage development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies, by Janssen Biotech, Inc., or Janssen. Early clinical data in essential thrombocythemia, or ET, myelofibrosis, or MF, and myelodysplastic syndromes, or MDS, suggest imetelstat may have disease-modifying activity by inhibiting the progenitor cells of the malignant clones for the underlying diseases.

On November 13, 2014, we entered into a collaboration and license agreement, or the Collaboration Agreement, pursuant to which we granted Janssen the exclusive rights to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014, and we received $35 million from Janssen as an upfront payment. Additional consideration under the Collaboration Agreement includes potential payments of up to an aggregate maximum total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales of imetelstat. The Collaboration Agreement also provides for a joint governance structure that includes a Joint Steering Committee, or JSC, with equal membership from both companies. See "Licensing—Collaboration and License Agreement with

Janssen" below, for more information about the Collaboration Agreement, including economic terms and termination provisions of the Collaboration Agreement. The information provided should be reviewed in the context of the sections entitled "Risks Related to Our Collaboration with Janssen" and "Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat" under Item 1A, "Risk Factors".

Under the Collaboration Agreement, Janssen is wholly responsible for developing, manufacturing, seeking regulatory approval for, and commercialization of, imetelstat worldwide. Janssen is currently conducting two clinical trials of imetelstat: IMbark, a Phase 2 trial in MF, in which the first patient was dosed in September 2015 and the last patient was enrolled in October 2016; and IMerge, a Phase 2/3 trial in MDS, in which the first patient was dosed in January 2016. We contribute 50% of the development costs for these trials, which Janssen is solely conducting.

For IMbark, Janssen completed internal data reviews in September 2016, April 2017 and March 2018. In these data reviews, activity within multiple outcome measures was observed with imetelstat treatment that suggest potential clinical benefit in patients with MF who are relapsed after or refractory to prior treatment with a janus kinase, or JAK, inhibitor. However, new patient enrollment in IMbark was suspended in October 2016 because an insufficient number of patients met the protocol defined interim efficacy criteria to continue enrollment. In March 2018, Janssen will officially close the trial to new patient enrollment. The JSC expects that the over 100 patients enrolled in IMbark to date will be adequate to assess overall survival. Patients who remain in the treatment phase of IMbark may continue to receive imetelstat, and until the protocol-specified primary analysis, all safety and efficacy assessments are being conducted as planned in the protocol, including following patients, to the extent possible, until death, to enable an assessment of overall survival. In March 2018, based on the rate of deaths occurring in the trial, the JSC determined that the protocol-specified primary analysis of IMbark, which includes an assessment of overall survival, will begin by the end of the second quarter of 2018. Upon the protocol-specified primary analysis, the main trial will be completed. The IMbark protocol is being amended to establish an extension phase of the trial to enable patients remaining in the treatment phase to continue to receive imetelstat treatment, per investigator discretion. Following completion of the primary analysis, Janssen must notify us of its decision, or the Continuation Decision, whether to: (i) maintain the license rights granted under the Collaboration Agreement and continue the development of imetelstat or (ii) discontinue the development of imetelstat and terminate the Collaboration Agreement. We expect Janssen to inform us of its decision by the end of the third quarter of 2018.

For IMerge, Janssen completed internal data reviews in September 2016 and April 2017. In addition, preliminary data from Part 1 of IMerge were presented at the American Society of Hematology Annual Meeting, or ASH, in December 2017. These data showed that among the 32 red blood cell transfusion-dependent MDS patients enrolled in Part 1of the trial, a subset of 13 patients who had not received prior treatment with either a hypomethylating agent or lenalidomide and did not have a deletion 5q chromosomal abnormality, or non-del(5q), exhibited an increased rate and durability of transfusion independence compared to the overall trial population. Based on the preliminary data from this 13-patient subset, Janssen has expanded new patient enrollment in Part 1 of IMerge to enroll approximately 20 additional patients to increase the experience and confirm the benefit-risk profile of imetelstat in this refined target patient population. In November 2017, the first patient was dosed in the expanded Part 1 and enrollment was completed in February 2018. Using the preliminary data from Part 1, Janssen sponsored an application to the United States Food and Drug Administration, or the FDA, for Fast Track designation for the potential treatment of adult patients with transfusion-dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an erythropoiesis stimulating agent. The FDA granted Fast Track designation to imetelstat in October 2017.

We had approximately $109.2 million in cash and investments as of December 31, 2017. To grow and diversify our business, we plan to continue our business development efforts to identify, and seek to acquire and/or in-license other oncology product candidates, programs or companies. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness or seek equity capital, or both.

Telomerase: Scientific Rationale

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 deoxyribonucleic acid, or DNA, sequence located at the ends of 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: a ribonucleic acid, or 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 or Medicine was awarded to Drs. Elizabeth H. Blackburn, Carol W. Greider and Jack Szostak, former Geron collaborators, for the discovery of how chromosomes are protected by both telomeres and 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. 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, enabling 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 nonclinical 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. Instead, 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 nonclinical 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.

Imetelstat: The First Telomerase Inhibitor to Advance to Clinical Development

Imetelstat is a lipid conjugated 13-mer oligonucleotide that we designed to be complementary to and bind with high affinity to the RNA template of telomerase, thereby directly inhibiting telomerase activity. Imetelstat does not elicit its effect through an antisense inhibition of protein translation. 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 penetrate cellular membranes, we conjugated the oligonucleotide to a lipid group. Imetelstat's IC50, or half maximal inhibitory concentration, is 0.5 - 10 nM in cell free assays. Single-dose kinetics in patients has shown dose-dependent increases in exposure to imetelstat, with a plasma half-life, which is the time it takes for the concentration or amount of imetelstat to be reduced by half, ranging from 4 - 5 hours. Data from animal studies and clinical trials have suggested that the residence time of imetelstat in bone marrow is long, with 0.19 - 0.51 μM observed at 41 - 45 hours after a 7.5 mg/kg dose in patients. Imetelstat also has been shown in nonclinical studies to exhibit relatively preferential inhibition of the clonal proliferation of malignant progenitor

cells compared to normal progenitors. For these reasons, imetelstat has been studied as a potential 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. We established doses and dosing schedules that were tolerable and achieved target exposures in patients that were consistent with those required for efficacy in animal models. 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. Dose-limiting toxicities included thrombocytopenia, or reduced platelet count, and neutropenia, or reduced neutrophil count.

Disease Characteristics of Hematologic Malignancies

Hematologic malignancies, or blood cancers, are classified according to the predominant location of the malignancy. A hematologic myeloid malignancy is a cancer that occurs in the precursor cells to red blood cells, platelets and white blood cells such as granulocytes. Examples include acute myelogenous leukemia, chronic myelogenous leukemia, MDS and the myeloproliferative neoplasms, such as ET, polycythemia vera and MF. These are different from lymphocytic malignancies which typically occur in the lymphoid lineage that includes white blood cells, such as T lymphocytes and B lymphocytes. Examples of lymphoid malignancies include acute lymphoblastic leukemia, chronic lymphocytic leukemia, lymphomas and multiple myeloma.

Many hematologic myeloid malignancies, such as ET, MF, and MDS, have been shown 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.

Unmet Medical Need in Myelofibrosis

MF, a type of myeloproliferative neoplasm, is a chronic blood cancer in which abnormal or malignant precursor cells in the bone marrow proliferate rapidly, causing scar tissue, or fibrosis, to form. As a result, normal blood production in the bone marrow is impaired and may shift to other organs such as the spleen and liver, which can cause them to enlarge substantially. People with MF may have abnormally low or high numbers of circulating red blood cells, white blood cells or platelets, and abnormally high numbers of immature cells in the blood or bone marrow. MF patients can also suffer from debilitating constitutional symptoms, such as drenching night sweats, fatigue, severe itching, or pruritus, abdominal pain, fever and bone pain. The estimated prevalence of MF in the United States, or U.S., is approximately 13,000 patients, with an annual incidence of approximately 3,000 patients. Up to 20% of patients with MF develop acute myeloid leukemia, or AML.

Approximately 70% of MF patients are classified as having intermediate-2 or high risk disease, as defined by the Dynamic International Prognostic Scoring System Plus, or DIPSS Plus, described in a 2011 *Journal of Clinical Oncology* article. There is currently only one targeted drug therapy, ruxolitinib, approved by the FDA and other health authorities for treating these MF patients. Currently, no drug therapy is approved for those patients who fail or no longer respond to that treatment, and median survival for such MF patients is only approximately seven to 16 months, representing a significant unmet medical need.

Unmet Medical Need in Myelodysplastic Syndromes

MDS is a group of blood disorders in which the proliferation of malignant progenitor cell clones in the bone marrow results in disordered and ineffective production of the myeloid lineage, which includes red blood cells, white blood cells and platelets. In MDS, bone marrow and peripheral blood cells may have abnormal, or dysplastic, cell morphology. MDS is frequently characterized clinically by severe anemia, or low red cell counts, and low hemoglobin. In addition, other peripheral cytopenias, or low numbers of white blood cells and platelets, may cause life-threatening infections and bleeding. Transformation to AML occurs in up to 30% of MDS cases and results in poorer overall survival.

MDS is the most common of the myeloid malignancies. There are approximately 60,000 people in the United States living with the disease and approximately 16,000 reported new cases of MDS in the United States every year. MDS is primarily a disease of the elderly, with median age at diagnosis around 70 years. The majority of patients, approximately 70%, fall into what are considered to be the lower risk groups at diagnosis, according to the International Prognostic Scoring System, or IPSS, that takes into account the presence of a number of disease factors, such as cytopenias and cytogenetics, to assign relative risk of progression to AML and overall survival.

Chronic anemia is the predominant clinical problem in patients who have lower risk MDS. Many of these patients become dependent on red blood cell transfusions, which can lead to elevated levels of iron, which the body has no normal way to eliminate, in the blood and other tissues. Iron overload is a potentially dangerous condition. Studies in patients with MDS have shown that iron overload resulting from regular red blood cell transfusions is associated with a poorer overall survival and a higher risk of developing AML.

Developing Imetelstat to Treat Hematologic Myeloid Malignancies

Proof-of-Concept of Imetelstat's Disease-Modifying Potential

We believe that imetelstat may have the potential to suppress the proliferation of malignant progenitor cell clones to allow recovery of normal hematopoiesis in patients with hematologic myeloid malignancies. Early clinical data from a Phase 2 trial of imetelstat in patients with ET, or the ET Trial, and a pilot study of imetelstat in patients with MF conducted at Mayo Clinic, or the Pilot Study, suggest imetelstat may exhibit such disease-modifying activity. These data were published in two separate articles in a September 2015 issue of *The New England Journal of Medicine*.

Reported adverse events, or AEs, and laboratory investigations associated with imetelstat in the ET Trial and the Pilot Study included cytopenias, gastrointestinal symptoms, constitutional symptoms, and hepatic biochemistry abnormalities. Dose-limiting toxicities, such as profound and prolonged thrombocytopenia and neutropenia, and other safety issues, including death, were observed in the ET Trial and the Pilot Study. In those trials, such myelosuppression was managed by dose holds and modification rules.

Imetelstat Clinical Trials Under the Collaboration with Janssen

Under the Collaboration Agreement (as described below), Janssen is conducting two clinical trials of imetelstat: IMbark and IMerge.

IMbark

Trial Design

IMbark was designed as a Phase 2 clinical trial to evaluate two starting dose levels of imetelstat (either 4.7 mg/kg or 9.4 mg/kg administered by intravenous infusion every three weeks) in approximately 200 patients with Intermediate-2 or High risk MF who have relapsed after or are refractory to prior treatment with a JAK inhibitor.

The co-primary efficacy endpoints for the trial are spleen response rate, defined as the proportion of patients who achieve a ≥35% reduction in spleen volume assessed by imaging, and symptom response rate, defined as the proportion of patients who achieve a ≥50% reduction in Total Symptom Score, at 24 weeks. Key secondary endpoints are safety and overall survival. Other secondary efficacy endpoints include the number of patients achieving complete remission, or CR, or partial remission, or PR, clinical improvement, or CI, and anemia, spleen and symptom responses. Exploratory endpoints include cytogenetic and molecular responses, as well as leukemia-free survival.

The first patient in IMbark was dosed in September 2015 and the last patient was enrolled in October 2016. The trial is being conducted at multiple medical centers across North America, Europe and Asia. Trial design information for IMbark, including patient eligibility criteria, and locations of clinical sites, is posted on clinicaltrials.gov.

Preliminary Observations and Actions

Since IMbark was initiated, Janssen has conducted internal data reviews in September 2016 and April 2017. Based on these reviews, the JSC made the following observations and implemented the following actions:

- The safety profile was consistent with prior clinical trials of imetelstat in hematologic malignancies, and no new safety signals were identified.
- The data supported 9.4 mg/kg as an appropriate starting dose in the trial. Activity within multiple outcome measures was observed with imetelstat treatment, suggesting potential clinical benefit in MF patients who are relapsed or refractory to prior JAK inhibitor treatment. A range of spleen volume reductions were reported, as well as reductions in Total Symptom Score, and improvements in hematologic parameters, such as anemia and peripheral blood counts. The spleen volume response rate observed in the 9.4 mg/kg dosing arm was less than that reported in clinical trials with JAK inhibitors in front-line MF patients and did not meet the interim criteria to continue enrollment of new patients. Thus, new patient enrollment was suspended in October 2016.
- Data from the 4.7 mg/kg arm did not warrant further investigation of that starting dose and this arm was closed to new patient enrollment following the September 2016 data review. Patients remaining in the treatment phase who were originally enrolled in the 4.7 mg/kg dosing arm are allowed to continue to receive imetelstat at that dose or, at the investigator's discretion are permitted to receive imetelstat at an increased dose of 9.4 mg/kg.

In October 2017, Janssen submitted to the FDA data from the aforementioned internal reviews, as well as additional efficacy and safety data, including information about deaths and overall survival in IMbark, in response to an FDA information request regarding the benefit-risk profile of imetelstat in relapsed or refractory MF and justification for continued treatment of patients enrolled in the trial. Since that submission, the FDA has not requested any additional information regarding IMbark, nor has the FDA requested any changes to the trial.

Current Status of IMbark

In March 2018, Janssen completed a third internal data review of IMbark, based on a January 2018 data cut, to enable a protocol amendment to allow the long-term treatment and follow up of patients, including for survival, and the JSC made the following observations and implemented the following actions:

- The safety profile was consistent with prior clinical trials of imetelstat in hematologic malignancies, and no new safety signals were identified.
- Outcome measures for efficacy, including spleen volume response and reductions in Total Symptom Score remain consistent with prior data reviews.
- With a median follow up of approximately 19 months, the median overall survival has not been reached in either dosing arm.
- The trial is officially being closed to new patient enrollment. More than 100 patients have been enrolled in IMbark to date, which is expected to be adequate to assess overall survival. Patients who remain in the treatment phase may continue to receive imetelstat, and until the primary analysis, all safety and efficacy assessments are being conducted as planned in the protocol, including following patients, to the extent possible, until death, to enable an assessment of overall survival.
- Based on the rate of deaths occurring in the trial, the JSC determined that the protocol-specified primary analysis, which includes an assessment of overall survival, will begin by the end of the second quarter of 2018.
- Upon the protocol-specified primary analysis, the main trial will be completed. The IMbark protocol is being amended to establish an extension phase of the trial to enable patients remaining in the treatment phase to continue to receive imetelstat treatment per investigator discretion. During the extension phase, standard data collection will primarily consist of safety information.

Continuation Decision Timing

Following completion of the IMbark protocol-specified primary analysis, Janssen must notify us of its Continuation Decision. We expect the protocol-specified primary analysis for IMbark to begin by the end of the second quarter of 2018. As such, we expect the Continuation Decision to occur by the end of the third quarter of 2018. Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time, such as before the start of the IMbark primary analysis, and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS. In this regard, we believe that without an adequate improvement in survival in relapsed or refractory MF, with the determination of adequacy to be assessed by Janssen in its sole discretion, Janssen would decide to discontinue the imetelstat program and terminate the Collaboration Agreement.

IMerge

Trial Design

IMerge is a two-part clinical trial evaluating imetelstat in transfusion dependent patients with Low or Intermediate-1 risk, also referred to as lower risk, MDS, who have relapsed after or are refractory to prior treatment with an erythropoiesis stimulating agent, or ESA. To be eligible for IMerge, patients must be transfusion-dependent, defined as requiring at least four units of packed red blood cells, or RBCs, over eight weeks before entry into the trial. Part 1 of the trial was designed as a Phase 2, open-label, single-arm trial to assess the efficacy and safety of imetelstat administered as an intravenous infusion at a starting dose of 7.5 mg/kg every four weeks in approximately 30 patients. Part 2 of the trial is planned as a Phase 3 double-blind, randomized, placebo controlled trial in approximately 170 patients.

The primary efficacy endpoint is the rate of RBC transfusion-independence, or RBC TI, lasting at least 8 weeks, defined as the proportion of patients without any RBC transfusion during any consecutive 8 weeks since entry to the trial. Key secondary endpoints include the rate of RBC TI lasting at least 24 weeks and the rate of hematologic improvement-erythroid, or HI-E, defined as a rise in hemoglobin of at least 1.5 g/dL above the pretreatment level for at least 8 weeks or a reduction of at least 4 units of RBC transfusions over 8 weeks compared with the prior RBC transfusion burden. Other secondary efficacy endpoints include the time to and duration of RBC TI; the proportion of patients achieving CR or PR according to the 2006 International Working Group, or IWG, criteria for MDS; the proportion of patients requiring RBC transfusions and the transfusion burden; the proportion of patients requiring the use of myeloid growth factors and the dose; assessments of the change in the patients' quality of life using several validated instruments; as well as an assessment of overall survival and time to progression to AML.

The first patient in IMerge was dosed in January 2016. The trial is being conducted at multiple medical centers across North and South America, Europe and Asia. Trial design information for IMerge, including patient eligibility criteria and locations of clinical sites, is posted on clinicaltrials.gov.

Preliminary Data from Part 1 of IMerge

Data, as of October 2017, from 32 patients enrolled in Part 1 of IMerge with a median follow-up of over a year were presented at the American Society for Hematology, or ASH, Annual Meeting and Exposition held in December 2017.

The Part 1 patients were heavily transfusion dependent, with a median baseline RBC transfusion burden of six units over 8 weeks, ranging from four to 14 units. In the overall trial population of 32 patients, approximately one-third achieved ≥8-week RBC TI after treatment with imetelstat. Approximately 15% of the patients achieved ≥24-week RBC TI, with the median duration of transfusion independence exceeding one year and sustained rises in hemoglobin by at least 1.5g/dL from pretreatment levels for these patients. Nearly two-thirds of the patients achieved HI-E. Almost all patients experienced some reduction in transfusion burden, with the average relative transfusion burden being reduced by approximately two-thirds compared to baseline levels. These data suggest clinical benefit of imetelstat among transfusion-dependent patients with lower risk MDS.

In the overall trial population, the rate of ≥8-week RBC TI did not differ based on the presence of ringed sideroblasts, indicating activity of imetelstat across different subtypes of MDS. In addition, the rate of ≥8-week RBC TI appeared to be independent of serum erythropoietin, or sEPO, levels at baseline.

Among the 32 patients enrolled in Part 1 of IMerge, a subset of 13 patients had not received prior treatment with either a hypomethylating agent, or HMA, or lenalidomide, and did not have a deletion 5q chromosomal abnormality, or non-del(5q). This 13-patient subset showed an increased durability and rate of transfusion independence compared to the overall trial population. Approximately half of the 13-patient subset population achieved ≥8-week RBC TI after treatment with imetelstat, and almost one-third of the subset population achieved ≥24-week RBC TI.

The safety profile in Part 1 was consistent with prior clinical trials of imetelstat in hematologic malignancies, and no new safety signals were identified. The most frequently reported adverse events were cytopenias, which were predictable, manageable and reversible, in most cases, including Grade 3 and 4, or severe, neutropenia and thrombocytopenia. In addition, reported adverse events did not differ significantly between the overall trial population and the 13-patient subset.

In October 2017, the FDA granted Fast Track designation to imetelstat for the treatment of adult patients with transfusion-dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an ESA. Janssen sponsored the application for Fast Track designation, supported by preliminary data from Part 1 of IMerge.

Current Status of IMerge

Based on preliminary data from the 13-patient subset, Janssen has expanded Part 1 of IMerge to enroll approximately 20 additional patients who are non-del(5q) and naïve to HMA and lenalidomide treatment to increase the experience and confirm the benefit-risk profile of imetelstat in a total of approximately 30 patients in this refined target population in Part 1. The first patient in the expanded Part 1 was dosed in November 2017, and enrollment was completed in February 2018. As such, in the first quarter of 2018, no data from the expanded Part 1 of IMerge were available to be reviewed.

Janssen has not committed to begin Part 2 of IMerge. We believe Janssen will initiate Part 2 only following an affirmative Continuation Decision, if any. Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time, such as, before the start of the IMbark primary analysis, and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS. In this regard, we believe that without an adequate improvement in survival in relapsed or refractory MF, with the determination of adequacy to be assessed by Janssen in its sole discretion, Janssen would decide to discontinue the imetelstat program and terminate the Collaboration Agreement.

Intellectual Property

Intellectual property, including patent protection, is very important to our business. We file patent applications in the United States and other jurisdictions, and we also rely on trade secret protection and contractual arrangements to protect aspects of our business. An enforceable patent with appropriate claim coverage can provide an advantage over competitors who may seek to employ similar approaches to develop therapeutics, and so the future commercial success of imetelstat in collaboration with Janssen, and therefore our future success, will be in part dependent on our intellectual property strategy. The information provided in this section should be reviewed in the context of the section entitled “Risks Related to Protecting Our Intellectual Property” under Item 1A, “Risk Factors”.

The development of biotechnology products, including imetelstat, typically includes the early development of a technology, followed by rounds of increasingly focused innovation around a product opportunity, including identification and definition of a specific product candidate and uses thereof, manufacturing processes, product formulation and administration methods. The result of this process is that biotechnology products are often protected by several families of patent filings that are filed at different times during product development and cover different aspects of the product. Consequently, earlier filed, broad technology patents will usually expire ahead of patents covering later developments such as product formulations, so that patent expirations on a product may span several years. Patent coverage may also vary from country to country based on the scope of available patent protection.

There are also opportunities to obtain an extension of patent coverage for a product in certain countries, which adds further complexity to the determination of patent life.

We endeavor to monitor worldwide patent filings by third parties that are relevant to our business. Based on this monitoring, we may determine that an action is appropriate to protect our business interests. Such actions may include negotiating patent licenses where appropriate, filing oppositions against a patent, filing a request for post grant review against a patent or filing a request for the declaration of an interference with a patent application or issued patent.

Imetelstat

We own issued patents in the United States, Europe and other countries related to imetelstat. Composition of matter patents generally provide the most material coverage, and therefore may convey competitive advantages. Because imetelstat is still under development, subsequent innovation and associated patent filings may provide additional patent coverage with later expiration dates. Examination of overseas patent applications typically lags behind U.S. examination particularly where cases are filed first in the United States. It may be possible to obtain patent term extensions of some patents in some countries for claims covering imetelstat which could further extend the patent term.

Product Candidate	U.S. Patent Status / Expiration Date	Europe Patent Status / Expiration Date	Japan Patent Status / Expiration Date
Imetelstat (composition of matter).	Issued / 2025	Issued / 2024	Issued / 2024

Our patent rights relating to imetelstat include those covering composition claims to the drug molecule and related nucleic acid telomerase inhibiting molecules, as well as reagents useful in manufacturing processes for the drug, and method of treatment and kit claims, certain of which are co-owned with other entities. Our patent rights for imetelstat and related products whose mechanism of action is telomerase inhibition have been exclusively licensed (even as to us) to Janssen for all human disorders or medical conditions. In addition, certain of our patent rights for measuring the length of telomeres in cells have been non-exclusively licensed to Janssen.

Under the terms of the Collaboration Agreement with Janssen, we remain responsible for prosecuting, at Janssen's direction, the patents exclusively licensed to Janssen, with costs shared between us and Janssen on a 50/50 basis. For intellectual property developed under the Collaboration Agreement, the party having sole ownership interest in such intellectual property will be responsible for prosecuting any such patents, with Janssen bearing all of the patent costs for such intellectual property solely owned by Janssen and for intellectual property either jointly owned or solely owned by us such patent costs to be shared between the parties on a 50/50 basis.

Telomerase

Our U.S. patent rights relating to telomerase that cover technologies such as variants of the protein component of human telomerase, or hTERT, and antibodies or antigen binding fragments that specifically bind to hTERT, are co-owned with and in-licensed exclusively from the University of Colorado. We expect the last of these U.S. patent rights to expire in 2019. A U.S. patent for identifying inhibitors of telomerase activity is in-licensed from the University of Texas Southwestern Medical Center and the University of California and will expire in 2019. See Item 1A, "Risk Factors" for additional information regarding our patent rights relating to telomerase.

Licensing

Collaboration and License Agreement with Janssen

On November 13, 2014, we entered into the Collaboration Agreement, pursuant to which we granted to Janssen the exclusive rights to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014, and we received $35 million from Janssen as an upfront payment. Additional consideration under the Collaboration Agreement includes potential payments of up to an aggregate maximum total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales.

Under the Collaboration Agreement, Janssen is wholly responsible for developing, manufacturing, seeking regulatory approval for, and commercialization of, imetelstat worldwide. To that end, Janssen is currently conducting two clinical trials, IMbark and IMerge. We are contributing 50% of the development costs for these clinical trials, which Janssen is solely conducting.

Following the protocol-specified primary analysis of IMbark by Janssen, if completed, or a certain time period after the initiation of the first Phase 3 MF study, if any, Janssen must notify us of their Continuation Decision as to whether they elect to maintain the license rights granted to them under the Collaboration Agreement and continue to advance the development of imetelstat in any indication. We expect the protocol-specified primary analysis for IMbark to begin by the end of the second quarter of 2018. As such, we expect the Continuation Decision to occur by the end of the third quarter of 2018. In the event that IMbark is terminated early, or placed on clinical hold or suspended by a regulatory authority for an extended period of time, then Janssen must instead notify us of their Continuation Decision by the date that is approximately 24 months after the initiation of IMerge.

In the event that Janssen notifies us of an affirmative Continuation Decision, we then would have an option, or the U.S. Opt-In Rights, to share further U.S. development and promotion costs, including our share of development costs incurred to date by Janssen beyond IMbark or IMerge, in exchange for higher tiered royalty rates and higher future development and regulatory milestone payments if imetelstat is successfully developed and approved. If we exercise the U.S. Opt-In Rights, then we and Janssen would share U.S. development and promotion costs beyond IMbark and IMerge on a 20/80 basis (Geron 20%, Janssen 80%), we would receive a $65 million milestone payment, or the Continuation Fee, at the time of an affirmative Continuation Decision, and would be eligible to receive additional potential payments of up to $470 million for the achievement of certain development and regulatory milestones, up to $350 million for the achievement of certain sales milestones, and tiered royalties ranging from a mid-teens up to a low twenties percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen. In addition, if we exercise the U.S. Opt-In Rights, we then would also have a separate co-promotion option, or the U.S. Co-Promotion Option, to provide 20% of the U.S. selling effort with our sales force personnel, in lieu of funding 20% of U.S. promotion costs, upon regulatory approval and commercial launch of imetelstat in the United States. Such co-promotion would be conducted under a Janssen prepared promotion plan, and in accordance with a co-promotion agreement to be agreed by us and Janssen at the time of our exercise of the U.S. Co-Promotion Option. We would be responsible for all costs associated with establishing and maintaining our sales force in any conduct of such co-promotion. All product sales would be booked by Janssen. If we do not exercise the U.S. Opt-In Rights, then all further development and promotion costs beyond IMbark or IMerge would be borne by Janssen, we would receive the $65 million Continuation Fee at the time of an affirmative Continuation Decision plus a $70 million payment for Janssen's retention of full U.S. rights to imetelstat, and would be eligible to receive additional potential payments of up to $415 million for the achievement of certain development and regulatory milestones, up to $350 million for the achievement of certain sales milestones, and tiered royalties ranging from a double-digit up to a mid-teens percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen.

Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including joint development and steering committees and working groups, to oversee and manage worldwide regulatory, development and manufacturing work under the joint clinical development plan and promotional activities (assuming we exercise the U.S. Opt-In Rights) for imetelstat, with Janssen responsible for the operational execution of those activities. In addition, both we and Janssen may propose to the joint development committee imetelstat development for any new indications not then provided for in the joint clinical development plan and if we and Janssen agree such development should be conducted outside of the joint clinical development plan, both we and Janssen would be entitled to independently undertake such development at the developing party's own cost, subject to the other party's obligation to provide reimbursement for its specified portion of the development costs plus a premium following marketing approval of imetelstat in such newly proposed indication as a result of such independent development. In the event that we do not exercise the U.S. Opt-In Rights following Janssen's affirmative Continuation Decision, the joint governance structure under the Collaboration Agreement would be dissolved, a joint oversight committee would monitor the progress of the collaboration, and we would have no further rights to conduct any independent imetelstat development.

After an affirmative Continuation Decision by Janssen, the Collaboration Agreement would remain in effect until the expiration of the last-to-expire patent or the royalty obligations on sales of imetelstat cease, unless terminated earlier. If Janssen does not effect an affirmative Continuation Decision, then the Collaboration Agreement would terminate and all rights to the imetelstat program would revert to us. Janssen may terminate the Collaboration Agreement at any time for convenience or due to a safety-related concern. If a notice of termination from Janssen occurs, we would be entitled to certain continued operational support from Janssen and cost-sharing under various circumstances and all rights to the imetelstat program would revert to us. The information provided in this section should be reviewed in the context of the sections entitled "Risks Related to Our Collaboration with Janssen" and "Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat" under Item 1A, "Risk Factors".

Other License Agreements

In addition to the above agreements, we have also granted licenses to a number of other organizations in the ordinary course of our business to utilize aspects of our technologies to develop and commercialize products outside of the imetelstat program. These include:

- a license to Janssen Pharmaceuticals, Inc., or Janssen Pharmaceuticals, an affiliate of Janssen, for the research, development and commercialization of products based on specialized oligonucleotide backbone chemistry and novel amidates for disorders, excluding cancers originating from the blood or bone marrow. In connection with this license, we also granted to Janssen Pharmaceuticals a non-exclusive worldwide license under our patent rights covering the synthesis of monomers, which are the building blocks of oligonucleotides. These non-exclusively licensed patent rights are licensed exclusively to Janssen under the Collaboration Agreement for the imetelstat program, and our license with Janssen Pharmaceuticals expressly excludes products whose predominant or primary mechanism of action is telomerase inhibition and is subject to the rights and licenses granted to Janssen under the Collaboration Agreement;
- licenses to several biotechnology and pharmaceutical companies to use or commercialize telomerase immortalized cells in drug discovery research;
- licenses to several companies to sell antibodies specific to telomerase for research purposes;
- licenses to several companies to develop and commercialize reagent kits, or to provide services, for the measurement of telomere length or telomerase activity for research purposes;
- a license to a company to develop and commercialize a particular telomerase-based technology for cancer detection; and
- a license to a company for the development of cancer immunotherapies for veterinary applications.

See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Revenues" for a further discussion of revenues from our license agreements. We expect revenues under our license agreements related to our telomerase technology to decline significantly in the coming years, and to be eliminated by the end of 2019, due to upcoming patent expirations on such technology.

Concentration of Revenues

Our revenues were $1.1 million, $6.2 million and $36.4 million for the years ended December 31, 2017, 2016 and 2015, respectively. We operate in one operating segment and have operations solely in the United States. All of our long-lived assets are maintained in the United States. See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Revenues" for additional detail regarding the composition of our revenues.

Research and Development

Our research and development costs were $11.0 million, $18.0 million and $17.8 million for the years ended December 31, 2017, 2016 and 2015, respectively. See Item 7, "Management's Discussion and Analysis of Financial

Condition and Results of Operations—Research and Development Expenses" for additional detail regarding our research and development activities.

Manufacturing

A typical sequence of steps in the manufacture of imetelstat drug product includes the following key components:

- starting materials, which are well-defined raw materials that are used to make bulk drug substance;
- bulk drug substance, which is the active pharmaceutical ingredient in a drug product that provides pharmacological activity or other direct effect in the treatment of disease; and
- final drug product, which is the finished dosage form that contains the drug substance that is shipped to the clinic for patient treatment.

In accordance with the Collaboration Agreement, Janssen is now responsible for the manufacture and management of the supply of imetelstat on a global basis for clinical trials and, after any regulatory approval, all commercial activities. Consequently, we are, and expect to remain, dependent on Janssen to appropriately supply imetelstat and other clinical trial materials. Currently, third-party contractors perform certain process development and other technical and scientific work with respect to imetelstat, as well as supply starting materials and manufacturing drug substance and drug product. Janssen does not have direct control over third-party personnel or operations. These third-party contractors, and/or any other contractors that Janssen may rely upon for the manufacture and/or supply of imetelstat, typically complete their services on a proposal by proposal basis under master supply agreements and 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. These third-party contractors, and/or any other contractors that Janssen may rely upon for the manufacture and/or supply of imetelstat, 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. Janssen is responsible for establishing any long-term commitments or commercial supply agreements with any of the third-party contractors for imetelstat. The information provided in this section should be reviewed in the context of the section entitled "Risks Related to Manufacturing" under Item 1A, "Risk Factors".

Consultants

We have consulting agreements with drug development professionals, clinicians and regulatory experts with experience in numerous fields, including oncology and drug regulations. We retain each consultant according to the terms of a consulting agreement. Under such agreements, we pay them a consulting fee and reimburse them for out-of-pocket expenses incurred in performing their services for us. In addition, some consultants hold options to purchase our common stock, subject to the vesting requirements contained in the consulting agreements. Our consultants may be employed by other entities and therefore may have commitments to their employer, or may have other consulting or advisory agreements that may limit their availability to us.

Competition

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 related to imetelstat, the study of telomeres, telomerase, or 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. We expect Janssen's decisions regarding continued development and/or commercialization, if any, of imetelstat, including completing IMerge and/or IMbark, its Continuation Decision or the termination of the Collaboration Agreement, to be informed in part by what Janssen believes is the estimated commercial potential of imetelstat for the treatment of hematologic malignancies, such as MF or MDS.

Many companies are developing alternative therapies to treat hematologic myeloid malignancies. 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 cell counts; 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 for MF further along in development than imetelstat, such as pacritinib by CTI Biopharma Corporation, or CTI Biopharma and fedratinib by Impact Biomedicines, Inc., acquired by Celgene Corporation, or Celgene, which have reported results from Phase 3 clinical trials. Other investigational treatments for MF include inhibitors of the JAK-STAT pathway, such as NS-018 by NS Pharma, Inc.; histone deacetylase inhibitors; interleukin-3 receptor targeted agents; inhibitors of heat shock protein 90; hypomethylating agents; PI3 Kinase and mTOR inhibitors; anti-fibrosis antibodies such as PRM-151 from Promedior, Inc.; hedgehog and SMO inhibitors; PIM kinase inhibitors; IAP inhibitors; anti-LOX2 inhibitors; recombinant pentraxin 2 protein; KIP-1 activators; TGF-beta superfamily inhibitors, such as sotatercept and luspatercept by Acceleron Pharma, Inc., or Acceleron, in collaboration with Celgene; FLT inhibitors; and other tyrosine kinase inhibitors.

If approved for commercial sale for the treatment of lower risk MDS, imetelstat would compete against a number of treatment options, including erythropoiesis stimulating agents and other hematopoietic growth factors; immunomodulators, such as lenalidomide by Celgene; hypomethylating agents, such as azacitidine by Celgene and decitabine by Janssen; in addition to investigational treatments in MDS that may be further along in development than imetelstat, such as oral versions of azacitidine; histone deacetylase inhibitors; TGF-beta superfamily inhibitors, such as luspatercept by Acceleron, in collaboration with Celgene; PI3 Kinase inhibitors; aminopeptidase inhibitors, such as tosedostat by CTI Biopharma; TLR2-specific antibodies; anti-CD33 antibodies; anti-CD38 antibodies, such as daratumumab by Genmab A/S in collaboration with Janssen; anti-CD123 antibodies, such as talacotuzumab by Janssen; retinoic acid receptor alpha agonists, such as SY-1425 by Syros Pharmaceuticals; hypoxia-inducible factor prolyl hydroxylase inhibitors, such as roxadustat by FibroGen, Inc.; Fas ligand inhibitors; and JAK-STAT pathway inhibitors.

Independently, Janssen is developing therapies for hematologic malignancies, including AML, MDS, multiple myeloma and ABC-subtype diffuse large B-cell lymphoma. Molecular and cellular pathways of interest include:

- cell surface targets for immune-directed therapy;
- immune checkpoint inhibition;
- leukemia stem cells;
- pathway addiction (genetic alterations, cell-type specific pathways);
- conditional sensitivity (stress, protein-producing tumors);
- targeting of T-cells and natural killer "NK" cells to tumors;
- identification of novel tumor-specific antigens; and
- progression from early MDS to AML and cancer interception.

Success by Janssen in any of these approaches may compete with imetelstat or render imetelstat obsolete or noncompetitive, which could lead to a decision by Janssen to discontinue the imetelstat program and terminate the Collaboration Agreement, which would materially and adversely affect our business and business prospects and might cause us to cease operations.

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 imetelstat. These companies and institutions compete with us in recruiting and retaining qualified development and management personnel as well as in acquiring technologies complementary to the imetelstat program.

In addition to the above factors, imetelstat will face competition based on:

- product efficacy and safety;
- convenience of product administration;
- cost of manufacturing;
- the timing and scope of regulatory consents;
- status of coverage and reimbursement;
- price; and
- patent position, including potentially dominant patent positions of others.

As a result of the foregoing, competitors may develop more commercially desirable or affordable products than imetelstat, or achieve earlier patent protection or product commercialization than us or Janssen. 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 or superior to those that may be demonstrated by imetelstat. 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, competitors may price their products below what Janssen 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 competitors may render imetelstat obsolete, which may cause Janssen to terminate the Collaboration Agreement, which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

Government Regulation

Regulation by governmental authorities in the United States and other countries is a significant factor in the development, manufacture and marketing of imetelstat, which is being developed in collaboration with Janssen. Imetelstat will require regulatory approval by governmental agencies prior to commercialization. In particular, potential human therapeutic products, such as imetelstat, are subject to rigorous preclinical and clinical testing and other approval procedures of the FDA and similar regulatory authorities in European and other countries. Various governmental statutes and regulations also govern or influence testing, manufacturing, safety, labeling, storage, import, export, distribution and recordkeeping related to such products and their marketing. In collaboration with Janssen, the process of obtaining these approvals and the subsequent compliance with appropriate statutes and regulations require the expenditure of substantial time and money, and there can be no guarantee that approvals will be granted. The information provided in this section should be reviewed in the context of the section entitled “Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat” under Item 1A, “Risk Factors”.

United States Food and Drug Administration Regulatory Approval Process

Prior to commencement of clinical trials involving humans, preclinical testing of new pharmaceutical products is generally conducted on animals in the laboratory to evaluate the potential efficacy and safety of a product candidate. The results of these trials are submitted to the FDA as part of an Investigational New Drug, or IND, application, which must become effective before clinical testing in humans can begin. The FDA can place an IND on clinical hold at any time, which prevents the conduct of clinical trials under the IND until safety concerns are addressed by the IND sponsor to the FDA’s satisfaction. Typically, clinical evaluation involves a time consuming and costly three phase trial

process. In Phase 1, clinical trials are conducted with a small number of healthy volunteers or patients afflicted with a specific disease to assess safety and to evaluate the pattern of drug distribution and metabolism within the body. In Phase 2, clinical trials are conducted with groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages and expanded evidence of safety. The Phase 2 trials can be conducted comparing the investigational treatment to a comparator arm, or not. If used, a comparator usually includes standard of care therapy. Safety and efficacy data from Phase 2 clinical trials, even if favorable, may not provide sufficient rationale for proceeding to a Phase 3 clinical trial. In Phase 3, large scale, multi-center, comparative trials are conducted with patients afflicted with a target disease to provide sufficient data to demonstrate the efficacy and safety required by the FDA. The FDA closely monitors the progress of each of the three phases of clinical testing and may, at its discretion, re-evaluate, alter, suspend, or terminate the trials. Human clinical trials must be conducted in compliance with Good Clinical Practice regulations and applicable laws, with the oversight of Institutional Review Boards for the protection of human subjects. The manufacture of drug product candidates is subject to requirements that drugs be manufactured, packaged and labeled in conformity with current Good Manufacturing Practices and applicable laws.

The results of the preclinical and clinical testing of drugs and complete manufacturing information are submitted to the FDA in the form of a New Drug Application, or NDA, for review and for approval prior to commencement of commercial sales. Submission of an NDA requires the payment of a substantial user fee to the FDA, which may be waived in certain cases. In responding to an NDA submission, the FDA may approve the drug for commercialization, impose limitations on its indications for use and labeling, including in the form of Risk Evaluation and Mitigation Strategies or may issue a complete response letter. Even if an NDA is approved, its sponsor is subject to ongoing and pervasive regulatory compliance requirements.

European and Other Regulatory Approval Process

Prior to initiating clinical trials in a region outside of the United States, a clinical trial application must be submitted and reviewed by the appropriate regulatory authority regulating the country in which the trial will be conducted. Whether or not FDA clearance or approval has been obtained, approval of a product by comparable regulatory authorities in Europe and other countries is necessary prior to commencement of marketing the product in such countries. The regulatory authorities in each country may impose their own requirements and may refuse to grant an approval, or may require additional data before granting it, even though the relevant product has been cleared or approved by the FDA or another authority. As with the FDA, the regulatory authorities in the European Union, or EU, and other developed countries have lengthy approval processes for pharmaceutical products. The process for gaining approval in particular countries varies, but generally follows a similar sequence to that described for FDA approval. In Europe, the European Medicine Agency, or EMA, and the European Committee for Proprietary Medicinal Products, or CPMP, provide a mechanism for EU member states to exchange information on all aspects of product licensing. The EU has established the EMA for the evaluation of medical products, with both a centralized procedure with which the marketing authorization is recognized in all EU member states and a decentralized procedure, the latter being based on the principle of licensing within one member country followed by mutual recognition by the other member countries.

Orphan Drug Designation

For a drug to qualify for orphan drug designation by the FDA, both the drug and the disease or condition must meet certain criteria specified in the Orphan Drug Act, or ODA, and FDA's implementing regulations. Orphan drug designation is granted by the FDA's Office of Orphan Drug Products in order to support development of medicines for underserved or rare diseases and patient populations that affect fewer than 200,000 people in the United States or, if the disease or condition affects more than 200,000 individuals annually in the United States, if there is no reasonable expectation that the cost of developing and making the drug would be recovered from sales in the United States. Orphan drug designation qualifies the sponsor of the drug for various development incentives of the ODA, including, if regulatory approval is received, the potential for seven years of market exclusivity with certain limited exceptions and certain tax credits for qualified clinical testing. A marketing application for a prescription drug product that has received orphan drug designation is not subject to a prescription drug user fee unless the application includes an indication for a disease or condition other than the rare disease or condition for which the drug was granted orphan drug designation. The granting of orphan drug designation does not alter the standard regulatory requirements and process for obtaining marketing approval. The safety and effectiveness of a drug must be established through adequate and well-controlled studies. Orphan drug exclusivity does not prevent the FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition.

On June 11, 2015 and December 23, 2015, the FDA granted orphan drug designation to imetelstat for the treatment of MF and MDS, respectively.

Orphan drug designation by the European Commission provides regulatory and financial incentives for companies to develop and market therapies that treat a life-threatening or chronically debilitating condition affecting no more than five in 10,000 persons in the EU, and where no satisfactory treatment is available. In the EU, orphan drug designation also entitles a party to financial incentives such as reduction of fees or fee waivers, as well as protocol assistance from the EMA during the product development phase, and direct access to the centralized authorization procedure. In addition, ten years of market exclusivity is granted following drug product approval, meaning that another application for marketing authorization of a later similar medicinal product for the same therapeutic indication will generally not be approved in the EU. This period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable to not justify maintenance of market exclusivity.

On December 14, 2015, the EMA granted orphan drug designation to imetelstat for the treatment of MF.

Fast Track Designation

Fast Track designation provides opportunities for frequent interactions with FDA review staff, as well as eligibility for priority review, if relevant criteria are met, and rolling review. Fast Track designation is intended to facilitate and expedite development and review of a New Drug Application to address unmet medical needs in the treatment of serious or life-threatening conditions. However, Fast Track designation does not accelerate conduct of clinical trials or mean that the regulatory requirements are less stringent, nor does it ensure that imetelstat will receive marketing approval or that approval will be granted within any particular timeframe. In addition, the FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data emerging from the imetelstat clinical development program.

In October 2017, the FDA granted Fast Track designation to imetelstat for the treatment of adult patients with transfusion-dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an ESA. Janssen sponsored the application for Fast Track designation using preliminary data from Part 1 of IMerge.

Fraud and Abuse, Data Privacy and Security, and Transparency Laws and Regulations

We may also be subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. These additional healthcare regulations could affect our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security, and physician payment sunshine laws.

The federal Anti-Kickback Statute makes it illegal for any person or entity, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully, directly or indirectly, solicit, receive, offer, or pay any remuneration that is intended to induce the referral of business, including the purchase, order, or lease of any good, facility, item or service for which payment may be made under a federal healthcare program, such as Medicare or Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the Anti-Kickback Statute has been violated. The Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act, collectively the Affordable Care Act or ACA, among other things, amended the intent requirement of the federal Anti-Kickback Statute such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate, in order to commit a violation.

Federal civil and criminal false claims and false statement laws, including the federal civil False Claims Act and whistleblower or *qui tam* actions, prohibit, among other things, any person or entity from knowingly presenting, or causing to be presented, for payment to, or approval by, federal programs, including Medicare and Medicaid, claims for items or services, including drugs, that are false or fraudulent or not provided as claimed. Entities can be held liable under these laws if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers, promoting a product off-label, or for

providing medically unnecessary services or items. In addition, a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Criminal prosecution is also possible for making or presenting a false, fictitious or fraudulent claim to the federal government.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, imposes certain requirements relating to the privacy, security, electronic exchange and breach reporting of individually identifiable health information upon entities subject to the law, such as health plans, healthcare clearinghouses and healthcare providers and their respective business associates that perform services for them that involve individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members.

Analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payors, including private insurers. Additionally, we may be subject to state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government. Further, we may be subject to state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians, other healthcare providers and healthcare entities, or marketing expenditures, as well as state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

If our operations are found to be in violation of any of these federal, state or foreign laws or regulations, we may be subject to penalties, including without limitation, administrative, civil and criminal penalties, damages, fines, disgorgement, individual imprisonment, exclusion from participation in government healthcare programs, reputational harm, diminished profits and future earnings, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws or the curtailment or restructuring of our operations.

Reimbursement and Healthcare Reform

Significant uncertainty exists as to the coverage and reimbursement status of any product candidate that receives regulatory approval. In the United States and markets in other countries, sales of imetelstat, if approved for commercial sale, will depend, in part, on the extent to which third-party payors provide coverage and establish adequate reimbursement levels for imetelstat.

In the United States, third-party payors include federal and state healthcare programs, government authorities, private managed care providers, private health insurers and other organizations. There has been increasing

legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare, and reform government program reimbursement methodologies for drugs. At the federal level, Congress and the Trump Administration have each indicated that they will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. Further, third-party payors are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical drug products and medical services, in addition to questioning their safety and efficacy. Such payors may limit coverage to specific drug products on an approved list, also known as a formulary, which might not include all of the FDA-approved drugs for a particular indication. Janssen may need to conduct expensive pharmaco-economic studies in order to demonstrate the medical necessity and cost-effectiveness of imetelstat, in addition to the costs required to obtain the FDA approvals. Nonetheless, imetelstat may not be considered medically necessary or cost-effective.

Moreover, the process for determining whether a third-party payor will provide coverage for a drug product may be separate from the process for setting the price of a drug product or for establishing the reimbursement rate that such a payor will pay for the drug product. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a drug product does not assure that other payors will also provide coverage for the drug product, as there is no uniform coverage and reimbursement policy among third-party payors in the United States. Adequate third-party reimbursement may not be available to enable Janssen to maintain price levels sufficient to realize an appropriate return on Janssen's and our investment in imetelstat.

The United States and some foreign jurisdictions are considering or have enacted legislative and regulatory proposals to contain healthcare costs, as well as to improve quality and expand access. For example, in March 2010, the ACA, was signed into law that included a number of provisions of importance to the biopharmaceutical industry. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. Additionally, President Trump signed The Tax Cuts and Jobs Act of 2017 on December 22, 2017, which includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year, that is commonly referred to as the "individual mandate." Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees. Congress may also consider other legislation to repeal or replace other elements of the ACA.

We expect that other healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria and lower reimbursement, and additional downward pressure on the price that may be charged for imetelstat.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, in August 2011, the Budget Control Act of 2011 was enacted, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction of at least $1.2 trillion for fiscal years 2012 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect beginning on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will stay in effect through 2027 unless additional Congressional action is taken. Additionally, in January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals and imaging centers. More recently, there has been heightened governmental scrutiny in the United States to control the rising cost of healthcare. For example, such scrutiny has resulted in several recent congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship

between pricing and manufacturer patient programs, reduce the price of drugs under Medicare, and reform government program reimbursement methodologies for drugs, some of which are included in the Trump administration's budget proposal for fiscal year 2019.

Executive Officers of the Company

The following table sets forth certain information with respect to our executive officers as of January 31, 2018:

Name	Age	Position
John A. Scarlett, M.D.	66	President and Chief Executive Officer
Olivia K. Bloom	49	Executive Vice President, Finance, Chief Financial Officer and Treasurer
Melissa A. Kelly Behrs.....	54	Executive Vice President, Business Development and Portfolio & Alliance Management
Andrew J. Grethlein, Ph.D.	53	Executive Vice President, Development and Technical Operations
Stephen N. Rosenfield, J.D.....	68	Executive Vice President, General Counsel and Corporate Secretary

John A. Scarlett, M.D., has served as our Chief Executive Officer and a director since September 2011 and President since January 2012. Dr. Scarlett has served as a director for Chiasma, Inc., a biopharmaceutical company focused on transforming injectable drugs into oral medications, since February 2015 and CytomX Therapeutics, Inc., a biopharmaceutical company focused on developing antibody therapeutics for the treatment of cancer, since June 2016. Prior to joining Geron, Dr. Scarlett served as President, Chief Executive Officer and a member of the board of directors of Proteolix, Inc., a privately held, oncology-oriented biopharmaceutical company, from February 2009 until its acquisition by Onyx Pharmaceuticals, Inc., an oncology-oriented biopharmaceutical company, in November 2009. From February 2002 until its acquisition by Ipsen, S.A. in October 2008, Dr. Scarlett served as the Chief Executive Officer and a member of the board of directors of Tercica, Inc., an endocrinology-oriented biopharmaceutical company, and also as its President from February 2002 through February 2007. From March 1993 to May 2001, Dr. Scarlett served as President and Chief Executive Officer of Sensus Drug Development Corporation. In 1995, he co-founded Covance Biotechnology Services, Inc., a contract biopharmaceutical manufacturing operation, and served as a member of its board of directors from inception to 2000. From 1991 to 1993, Dr. Scarlett headed the North American Clinical Development Center and served as Senior Vice President of Medical and Scientific Affairs at Novo Nordisk Pharmaceuticals, Inc., a wholly owned subsidiary of Novo Nordisk A/S. Dr. Scarlett received his B.A. degree in chemistry from Earlham College and his M.D. from the University of Chicago, Pritzker School of Medicine.

Olivia K. Bloom has served as our Executive Vice President, Finance since February 2014, Chief Financial Officer since December 2012 and Treasurer since February 2011. Ms. Bloom previously served as our Senior Vice President, Finance from December 2012 to February 2014, Chief Accounting Officer from September 2010 to December 2012 and Vice President, Finance from January 2007 to December 2012. Ms. Bloom joined the Company in 1994 as a Senior Financial Analyst and from 1996 to 2011 served as our Controller. Prior to joining Geron, Ms. Bloom started her career in public accounting at KPMG Peat Marwick and became a Certified Public Accountant in 1994. Ms. Bloom graduated Phi Beta Kappa with a B.S. in Business Administration from the University of California at Berkeley.

Melissa A. Kelly Behrs has served as our Executive Vice President, Business Development and Portfolio & Alliance Management, since July 2014. Previously, she was our Executive Vice President, Portfolio and Alliance Management starting in February 2014, and our Senior Vice President, Portfolio and Alliance Management from September 2012 to February 2014. Ms. Behrs joined Geron in November 1998 as Director of Corporate Development. Since then, she has served in various managerial positions, including General Manager, R&D Technologies; Vice President, Corporate Development; Senior Vice President, Therapeutic Development, Oncology; and Senior Vice President, Strategic Portfolio Management. From 1990 to 1998, Ms. Behrs worked at Genetics Institute, Inc., a biotechnology research and development company, serving initially as Assistant Treasurer and then as Associate Director of Preclinical Operations where she was responsible for all business development, regulatory,

and project management activities for the Preclinical Development function. Ms. Behrs received a B.S. from Boston College and an M.B.A. from Babson College.

Andrew J. Grethlein, Ph.D., has served as our Executive Vice President, Development and Technical Operations, since July 2014. He joined Geron in September 2012 as our Executive Vice President, Technical Operations. Prior to joining Geron, Dr. Grethlein was Executive Vice President and Chief Operating Officer for Inspiration Biopharmaceuticals, a biopharmaceutical company, from January 2010 to September 2012. From October 2008 until January 2010, Dr. Grethlein was Senior Vice President of Biotechnology and Portfolio Management Team Leader for Hematology at Ipsen S.A., a global specialty pharmaceutical company. His responsibilities at Ipsen included planning and execution of worldwide strategy for product and portfolio development in the hematologic therapeutic area. From 2003 to 2008, Dr. Grethlein served as Senior Vice President of Pharmaceutical Operations at Tercica, Inc., an endocrinology-oriented biopharmaceutical company, where he was a member of the senior executive team that governed corporate strategy, business planning and company operations, and had responsibility for all manufacturing and quality functions. Before joining Tercica, Dr. Grethlein served in various positions at Elan Corporation, a biotechnology company, from 1997 to 2003, including as Senior Director, South San Francisco Pharmaceutical Operations. From 1995 to 1997, Dr. Grethlein served as Manager, Biologics Development and Manufacturing, for Athena Neurosciences, Inc., a pharmaceutical company. Prior to this, he served in various engineering positions for the Michigan Biotechnology Institute, a nonprofit technology research and business development corporation. Dr. Grethlein received his A.A. degree in liberal arts from Simon's Rock Early College, his B.S. in biology from Bates College, and his M.S. and Ph.D. in chemical engineering from Michigan State University.

Stephen N. Rosenfield, J.D., has served as our Executive Vice President, General Counsel and Corporate Secretary since February 2012, General Counsel and Secretary since January 2012 and Secretary since October 2011. From July 2009 to February 2012, Mr. Rosenfield served as a consultant to private companies. From June 2004 until June 2009, Mr. Rosenfield held several positions at Tercica, Inc., an endocrinology-oriented biopharmaceutical company, and through its acquisition by Ipsen, S.A. in October 2008, including General Counsel and Secretary. Prior to joining Tercica, Mr. Rosenfield served as the Executive Vice President of Legal Affairs, General Counsel and Secretary of InterMune, Inc., a biotechnology company that focused on pulmonology and fibrotic diseases. Prior to joining InterMune, Mr. Rosenfield was an attorney at Cooley LLP, an international law firm, where he served as outside counsel for biotechnology and technology clients. Mr. Rosenfield received a B.S. from Hofstra University and a J.D. from Northeastern University School of Law.

Employees

As of December 31, 2017, we had 15 full-time and three part-time employees. Two of our employees hold Ph.D. degrees and seven hold other advanced degrees. Of this current total workforce, two employees were engaged in, or directly supported, our research and development activities, and 16 employees were engaged in business development, legal, finance and administration. None of our employees are covered by a collective bargaining agreement; nor have we experienced work stoppages. We consider relations with our employees to be good.

Corporate Information

Geron Corporation was incorporated in the State of Delaware on November 28, 1990.

Available Information

Our internet address is www.geron.com. Information included on our website is not part of this annual report on Form 10-K. We make available free of charge on our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the United States Securities and Exchange Commission, or the SEC. In addition, copies of our annual reports are available free of charge upon written request. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that site is www.sec.gov.

ITEM 1A. RISK FACTORS

Our business is subject to various risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. You should carefully consider the risks and uncertainties described below, together with all of the other information included in this annual report on Form 10-K. Our business faces significant risks and uncertainties, and those described below may not be the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently believe are immaterial may also significantly impair our business, financial condition or results of operations. If any of these risks or uncertainties occur, our business, financial condition or results of operations could suffer, the market price of our common stock could decline and you could lose all or part of your investment in our common stock.

RISKS RELATED TO OUR COLLABORATION WITH JANSSEN

We have outlicensed our sole product candidate, imetelstat, to Janssen. If Janssen discontinues the imetelstat program and/or terminates the Collaboration Agreement, our business and business prospects would be severely harmed, and we might cease operations, the development and/or commercialization of imetelstat would be terminated or substantially delayed, and the market price of our common stock would be adversely affected.

Janssen may terminate the Collaboration Agreement at any time at its sole discretion. If imetelstat fails to meet criteria determined by Janssen to support an affirmative Continuation Decision, or for any other reason, Janssen may discontinue the imetelstat program and terminate the Collaboration Agreement. In this regard, we believe that without an adequate improvement in survival in relapsed or refractory MF in IMbark, with the determination of adequacy to be assessed by Janssen in its sole discretion, Janssen would decide to discontinue the imetelstat program and terminate the Collaboration Agreement.

In addition, Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS. Any discontinuation of the imetelstat program or termination of the Collaboration Agreement by Janssen at any time would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations, and the market price of our common stock would be adversely affected.

If Janssen terminates the Collaboration Agreement:

- we would no longer have the right to receive any milestone payments or royalties under the Collaboration Agreement;
- further development of imetelstat, if any, would be significantly delayed or terminated;
- we would bear all risks and costs related to any further clinical development, manufacturing, regulatory approval and commercialization of imetelstat, if any;
- we might determine that the commercial potential of imetelstat does not warrant further development of imetelstat by us, in which case the development of imetelstat would cease, which might cause us to cease operations;
- we would need to raise substantial additional capital if we were to choose to pursue imetelstat development on our own, or we would need to establish alternative collaborations with third parties, which might not be possible in a timely manner, or at all, or might not be possible on terms acceptable to us, in which case it would likely be necessary for us to limit the size or scope of the imetelstat development program;
- if we were to choose to pursue imetelstat development independently, we would need to hire additional qualified employees and secure multiple third-party vendors and service providers to support the development and commercialization of imetelstat, which may take significant amounts of time, may not be feasible, and which would increase our need for additional funding; and

- if we were to choose to pursue imetelstat development independently, we would need to work collaboratively with Janssen to transfer the imetelstat program back to us, and such a transfer might take significant amounts of time, would be resource intensive and costly, and might not be feasible, in which case the development of imetelstat would likely be significantly delayed or terminated.

If Janssen does not provide an affirmative Continuation Decision in a timely manner, or at all, our business and business prospects would be severely harmed, and we might cease operations.

Under the terms of the Collaboration Agreement, Janssen is not obligated to make any additional payments to us until it makes an affirmative Continuation Decision following the protocol-specified primary analysis of IMbark, or, if IMbark is terminated early, or placed on clinical hold or suspended by a regulatory authority for an extended period of time, within approximately 24 months after the initiation of IMerge. In March 2018, the JSC agreed that the protocol-specified primary analysis for IMbark will begin by the end of the second quarter of 2018. As such, we expect the Continuation Decision to occur by the end of the third quarter of 2018. If Janssen terminates IMbark early based on preliminary or ongoing data assessments, safety concerns or for any other reason, or the trial is placed on clinical hold or suspended by a regulatory authority, the protocol-specified primary analysis for IMbark may not take place at all, which would further delay the timing of any Continuation Decision or result in a negative Continuation Decision. Delays in the timing of the Continuation Decision or a negative Continuation Decision from Janssen could increase our development costs and would impair our ability to earn revenues from milestone payments or royalties under the Collaboration Agreement, any of which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

If there are further delays in IMerge or IMbark, Janssen may decide to cease the development of imetelstat and terminate the Collaboration Agreement, and our business and business prospects would be severely harmed.

The expansion of enrollment in Part 1 of IMerge has prolonged the development of imetelstat in lower risk MDS, and Janssen could decide not to proceed with Part 2 of IMerge. Janssen has made no commitment to commence Part 2 of IMerge. Even if Janssen obtains additional data from the refined target patient population, such data may not support the development of imetelstat in the refined target patient population for Part 2. In any event, we believe Janssen will initiate Part 2 only following an affirmative Continuation Decision, if any. Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time, such as, before the start of the IMbark primary analysis, and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS. In this regard, we believe that without an adequate improvement in survival in relapsed or refractory MF, with the determination of adequacy to be assessed by Janssen in its sole discretion, Janssen would decide to discontinue the imetelstat program and terminate the Collaboration Agreement. In addition, delays, including in the commencement of Part 2 of IMerge, could cause Janssen to discontinue the imetelstat development program and terminate the Collaboration Agreement.

For IMbark, although we expect the protocol-specified primary analysis to begin by the end of the second quarter of 2018, the primary analysis may not occur on the timing that we expect, or at all, if any of the following occurs:

- Janssen terminates IMbark based on preliminary or ongoing data assessments, safety concerns, feedback or requirements from the FDA or other regulatory authorities or terminates the Collaboration Agreement;
- the FDA or any other regulatory authority places a clinical hold on or suspends the trial for any reason;
- Janssen decides that further changes to the trial are necessary;
- additional time is needed to obtain longer-term efficacy and safety data; or
- sufficient efficacy and safety data are not available to assess overall survival.

Even if Janssen obtains longer-term efficacy and safety data for IMbark, Janssen or the FDA or any other regulatory authorities may determine that such data do not show an adequate improvement in survival to support

further development and potential regulatory approval for imetelstat in relapsed or refractory MF patients, which we expect would result in a decision by Janssen to discontinue IMbark and the imetelstat program and terminate the Collaboration Agreement. In addition, the time needed to obtain longer-term efficacy and safety data for IMbark, including sufficient data to assess overall survival, could significantly further delay the development of imetelstat in MF and in lower risk MDS, and the timing of a Continuation Decision, if any.

If our collaboration with Janssen is not successful, our business and business prospects would be severely harmed.

Our collaboration with Janssen may be unsuccessful due to many factors, including the following:

- the development of imetelstat could be further delayed, perhaps substantially, depending on: the time needed to collect sufficient efficacy and safety data from the expanded Part 1 of IMerge to assess the clinical benefit, if any, of imetelstat in the refined target patient population of Part 1; the time needed to obtain longer-term efficacy and safety data for IMbark, including sufficient data to conduct the protocol-specified primary analysis, which would include an assessment of overall survival in IMbark; and any feedback or other actions relating to past and potential future information requests from the FDA or other regulatory authorities;
- Janssen may believe that any preliminary or final results of IMbark and/or IMerge, including any future internal data reviews of these trials, are negative under the criteria set forth in the respective protocols or otherwise, are inconclusive, or do not otherwise demonstrate adequate efficacy or clinical benefit to warrant further development or commercialization of imetelstat by Janssen, including if Janssen believes that there is not an adequate improvement in survival in relapsed or refractory MF in IMbark, which would likely result in a termination of the Collaboration Agreement by Janssen at any time, or a negative Continuation Decision;
- Janssen may choose to terminate the Collaboration Agreement for any reason;
- Janssen may provide a negative Continuation Decision and halt its development of imetelstat, in which case we would receive no further payments from Janssen under the Collaboration Agreement;
- Janssen may observe additional or new safety issues in either IMbark and/or IMerge, or any potential future clinical trials of imetelstat, which may result in a termination of the Collaboration Agreement by Janssen at any time, or a negative Continuation Decision;
- Janssen may conclude that the commercial potential of imetelstat does not meet Janssen's internal thresholds or yield a timely return on its investment in imetelstat, either of which would cause Janssen to reconsider continued development of imetelstat, and could result in a renegotiation or a termination of the Collaboration Agreement by Janssen, and if we were to agree to renegotiated terms and Janssen were to continue development of imetelstat, the potential milestone payments and royalties we may receive under such renegotiated agreement would likely be less than the potential milestone payments and royalties under the current Collaboration Agreement;
- Janssen may choose not to develop and commercialize imetelstat in certain, or any, markets or for one or more indications, if at all;
- in the event of a dispute between us and Janssen regarding Janssen's performance under the Collaboration Agreement, it may be difficult or impossible for us to prove that Janssen breached its obligations under the Collaboration Agreement, including the obligation to use "commercially reasonable efforts" with regard to the development, regulatory approval, manufacture and commercialization of imetelstat under the Collaboration Agreement;
- Janssen may not dedicate the resources necessary to carry imetelstat through clinical development, and this would delay or preclude the achievement of development, regulatory or sales milestones under the Collaboration Agreement;
- Janssen may change the focus of its development or commercialization efforts or prioritize other programs more highly and, accordingly, reduce the efforts and resources allocated to imetelstat, which might delay or halt the development or commercialization of imetelstat, and would have the direct effect

of delaying milestone payments or reducing our royalties or share of potential co-promotion activities since the extent of our U.S. Co-Promotion Option is limited to a percentage of overall promotion activities under the Collaboration Agreement;

- Janssen may be unable to obtain regulatory clearances or approvals to continue clinical development or commercialize imetelstat for sale in the United States and other countries, in a timely manner, or at all, or such regulatory clearances or approvals may be revoked or put on hold by governmental or regulatory authorities in any jurisdiction;
- Janssen may not comply with all applicable regulatory requirements or may fail to report safety data from clinical trials of imetelstat in accordance with all applicable regulatory requirements, which could delay, suspend or stop clinical activities of imetelstat being performed by Janssen or by us;
- subject to our election of the U.S. Co-Promotion Option, Janssen will be responsible for all aspects of the commercialization of imetelstat worldwide, including pricing decisions which would affect the royalties on worldwide net sales we could receive;
- Janssen may fail to manufacture or supply sufficient quantities of imetelstat or other clinical trial materials for use in current and/or planned clinical trials, which could delay, suspend or stop any imetelstat clinical activities;
- Janssen may fail to develop a commercially viable formulation or manufacturing process for imetelstat, and may fail to manufacture or supply sufficient quantities of imetelstat for commercial use, if approved, which would result in lost sales revenue for Janssen and reduced royalties for us;
- the loss or impairment of our intellectual property rights related to imetelstat might delay or halt ongoing or potential future clinical trials of imetelstat by Janssen and any applications for regulatory approval by Janssen, and therefore delay or halt the payment of any potential milestone payments to us;
- Janssen's ability to develop, manufacture and commercialize imetelstat may be delayed or substantially impacted if we are unable to provide to Janssen in a timely manner, or at all, data or results from studies of imetelstat conducted by us and others prior to the Collaboration Agreement, or other information, related to imetelstat that may be requested by Janssen; and
- if Janssen is acquired by a third party during the term of our collaboration with Janssen, the acquirer may have different strategic priorities that could cause it to terminate the Collaboration Agreement or reduce its commitment to our collaboration.

If our collaboration with Janssen is unsuccessful as a result of any of the above factors, or any other factors, then Janssen may terminate the Collaboration Agreement or cease its efforts to develop, manufacture or commercialize imetelstat, and we would not be eligible for any further payments from Janssen under the Collaboration Agreement, which would adversely impact our financial results, business and business prospects, and the future of imetelstat, and could cause us to cease operations.

If Janssen does not perform in the manner we expect or fulfill its responsibilities under the Collaboration Agreement in a timely manner, or at all, the clinical development, manufacturing, regulatory approval and/or commercialization of imetelstat could be further delayed or terminated.

The timely and successful completion by Janssen of the development, manufacturing, regulatory and commercialization activities for imetelstat will significantly affect the timing and amount of any revenues from milestone payments and royalties we may receive under the Collaboration Agreement, and these activities will be influenced by, among other things, the efforts and allocation of resources by Janssen, none of which we control. Accordingly, there can be no assurance that any of the development, regulatory or sales milestones under the Collaboration Agreement will be achieved or that we will receive any future milestone or royalty payments under the Collaboration Agreement.

In addition, because Janssen is solely responsible for the operational execution of worldwide regulatory, development, manufacturing and commercialization activities related to imetelstat, we are solely dependent on Janssen to provide us with timely and accurate information concerning these activities as well as information about

the costs incurred under the Collaboration Agreement. If we do not receive accurate information from Janssen in a timely manner, or at all, regarding these activities, including, for example, plans for, and enrollment of, and efficacy and safety results from, clinical trials of imetelstat, and commercialization assumptions or criteria set by Janssen for the continued development and commercialization of imetelstat, then the timeliness and accuracy of our public disclosures, as well as our governance-related decision-making regarding these activities, may be adversely affected.

Any development activities conducted by Janssen under a Janssen Independent Development Plan, or IDP, may create significant reimbursement obligations for us, which could result in reduced cash inflow from future milestone payments and royalties until we have fully paid our reimbursement obligations under the Collaboration Agreement.

Under the Collaboration Agreement, Janssen may conduct certain development activities for imetelstat under a Janssen IDP, if we and Janssen agree that such activities should be performed outside of the mutually agreed global clinical development plan. Although Janssen would bear all of the costs for such Janssen IDP, if we exercised our U.S. Opt-In Rights and if any data from a Janssen IDP supports approval by a regulatory authority in the United States or other countries, then we would be required to reimburse Janssen for our share of the costs of that Janssen IDP plus a premium pursuant to the terms of the Collaboration Agreement. This cost reimbursement is payable as a lump sum up to a certain threshold upon receipt of regulatory approval for the Janssen IDP. Any remaining amounts in excess of the threshold are payable in installments by offsetting milestone payments or royalties received by us over a certain period of time, at which time any remaining reimbursement amount would be payable in a lump sum. This payment mechanism could result in reduced cash inflow from future milestone payments and royalties, which would adversely affect our results of operations and financial condition.

Under the Collaboration Agreement, if we develop imetelstat independently under our own IDP, the success of that IDP depends on our ability to provide adequate financial and technical resources.

Under the Collaboration Agreement, we may conduct certain development activities for imetelstat under a Geron IDP if we and Janssen agree that such activities should be performed outside of the mutually agreed global clinical development plan. In the event we conduct any clinical activities under a Geron IDP, we will be responsible for paying all of the development costs for the Geron IDP. Because the outcome of any clinical activities and/or regulatory approval process is highly uncertain, we cannot reasonably estimate whether any Geron IDP activities we may undertake will succeed. Since we are only eligible for reimbursement from Janssen for their share of the Geron IDP costs plus a premium if any data from a Geron IDP supports approval by a regulatory authority in the United States or other countries, we may not recoup our investment in any Geron IDP, which could adversely affect our financial condition. In addition, we may need additional capital to support any Geron IDP activities and we cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement and potential future sales of our common stock will be sufficient to fund these future activities. If sufficient capital is not available, we may be unable to pursue activities under a Geron IDP, which could adversely affect our business.

To execute activities under a Geron IDP, we likely would be required to collaborate with contract research organizations, investigators, academic institutions, vendors, clinical trial sites, scientific consultants and others. We would be dependent upon the ability of these parties to perform their responsibilities reliably. In addition, we would have limited control over the activities of these organizations, investigators, scientific consultants and vendors. Except as otherwise required by our agreements with them, we could expect only limited amounts of their time to be dedicated to our activities. If any of these third parties were unable or refused to contribute to projects on which we needed their help, our ability to conduct activities under a Geron IDP could be significantly harmed. Also, if the performance of these services is not of the highest quality, 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 clinical activities under a Geron IDP which would, in turn, hinder our ability to make the necessary representations or provide the necessary information to regulatory authorities, if at all. As a result, we may not obtain regulatory approval and receive any reimbursement from Janssen for their share of the costs for the Geron IDP, which could adversely affect our business and financial condition.

If Janssen makes an affirmative Continuation Decision under the Collaboration Agreement, our decision to exercise our U.S. Opt-In Rights must thereafter be made within a short timeframe and, as a result, we may be required to invest substantial capital based on limited clinical data and information.

If Janssen makes an affirmative Continuation Decision under the Collaboration Agreement, we must decide whether to elect to exercise our U.S. Opt-In Rights within a short timeframe following such a decision, and although we expect to receive information from Janssen regarding data from IMbark and IMerge, proposed future clinical development plans and costs for imetelstat, estimates in timing for commercializing imetelstat and related promotional activities, and a calculation of our share of development costs incurred to date by Janssen that we will be required to reimburse if we exercise our U.S. Opt-In Rights, we will be required to rapidly decide whether to make a substantial capital investment in imetelstat prior to the conclusion of any Phase 3 registration-enabling clinical trial. Accordingly, if we exercise our U.S. Opt-In Rights and imetelstat were to become unsuccessful in any Phase 3 registration-enabling clinical trial or were to fail to receive regulatory approval, we would not receive any financial return on this substantial capital investment. Such an occurrence would negatively impact our financial condition and results of operations, and might cause us to cease operations.

RISKS RELATED TO CLINICAL DEVELOPMENT, REGULATORY APPROVAL AND COMMERCIALIZATION OF IMETELSTAT

The 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. Significant research and development activities will be necessary to further develop imetelstat, which is our sole product candidate that we have exclusively outlicensed to Janssen, which may take years to accomplish, if at all.

Because of the significant scientific, regulatory and commercial challenges that must be overcome to successfully research, develop and commercialize imetelstat, the development of imetelstat in hematologic myeloid malignancies, including MF and MDS, or any other indications, may be further delayed or abandoned, even after significant resources have been expended on it. Examples of such decisions include:

- the discontinuation of our Phase 2 clinical trial of imetelstat in metastatic breast cancer in September 2012;
- the discontinuation of our development of imetelstat in solid tumors with short telomeres in April 2013;
- Janssen's decisions in the third quarter of 2016 to close the 4.7 mg/kg dosing arm in IMbark to new patient enrollment and to suspend enrollment in the 9.4 mg/kg dosing arm in IMbark because an insufficient number of patients in the 9.4 mg/kg dosing arm met the protocol defined interim efficacy criteria at 12 weeks; and
- Janssen's decision in the third quarter of 2017 to expand enrollment in Part 1 of IMerge to include approximately 20 additional lower risk MDS patients in a refined target population.

Any further delay, suspension or abandonment of the development of imetelstat in hematologic myeloid malignancies, including delays resulting from potential future protocol amendments for IMerge, IMbark or potential future clinical trials of imetelstat, would have a material adverse effect on our collaboration with Janssen, which could result in the termination of the Collaboration Agreement. Any of these events would have severe adverse effects on the future of imetelstat and our business prospects and likely result in the failure of our business.

Imetelstat may cause, or have attributed to it, undesirable or unintended side effects or other adverse events that delay or prevent the commencement and/or completion of clinical trials for imetelstat, delay or prevent its regulatory approval, or limit its commercial potential.

Imetelstat may cause, or have attributed to it, undesirable or unintended side effects or other adverse events affecting its safety or efficacy that could cause Janssen to interrupt, delay or halt current or potential future clinical trials of imetelstat. For example, adverse events and dose limiting toxicities observed in previous clinical trials of imetelstat include:

- hematologic toxicities, such as profound and/or prolonged thrombocytopenia or neutropenia, including one case of febrile neutropenia after prolonged myelosuppression with intracranial hemorrhage resulting in patient death, which the investigator assessed as possibly related to imetelstat;
- bleeding events, with or without thrombocytopenia;
- liver function test, or LFT, abnormalities, the clinical significance and long-term consequences of which are currently undetermined;
- gastrointestinal events;
- infections;
- muscular and joint pain;
- fatigue; and
- infusion reactions.

Such adverse events and other safety issues, including deaths, have also been observed by Janssen in IMbark and IMerge. If patients in current or potential future clinical trials of imetelstat experience similar or more severe adverse events, or new or unusual adverse events, or if the FDA or other regulatory authorities determine that efficacy and safety data in current or potential future clinical trials of imetelstat, do not support an adequate benefit-risk profile to justify continued treatment of patients, then the FDA or other regulatory authorities may again place the INDs for imetelstat on clinical hold, as occurred in March 2014.

Further, clinical trials by their nature examine the effect of a potential therapy in a sample of the potential future patient population. As such, clinical trials conducted with imetelstat, to date and in the future, may not uncover all possible adverse events that patients treated with imetelstat may experience. Because remaining patients in the treatment phase continue to receive imetelstat in the Pilot Study, IMbark and IMerge, including the expanded Part 1, additional or more severe toxicities or safety issues, including additional serious adverse events and dose limiting toxicities, may be observed as patient treatment continues and more data become available. In addition, since IMbark, IMerge and the Pilot Study are ongoing studies in which additional data are being generated, the benefit-risk profile of imetelstat will continue to be assessed, including the risk of hepatotoxicity, severe cytopenias, fatal bleeding with or without any associated thrombocytopenia, patient injury or death, and any other severe adverse effects that may be associated with life-threatening clinical outcomes. If such toxicities or other safety issues in any clinical trial of imetelstat are determined by Janssen, the FDA or any other regulatory authority to result in an unacceptable benefit-risk profile, then:

- additional information supporting the benefit-risk profile of imetelstat may be requested by the FDA or other regulatory authorities and if any such information supplied by Janssen is not deemed acceptable, current clinical trials of imetelstat could be suspended, terminated, or placed on clinical hold by the FDA or other regulatory authorities;
- patient recruitment and the ability to retain enrolled patients in current clinical trials may be negatively affected, resulting in incomplete data sets and the inability to adequately assess the benefit-risk profile of imetelstat in a specific patient population, such as the inability to assess overall survival in IMbark or the benefit-risk profile of imetelstat in the refined target patient population in IMerge; or
- additional, unexpected clinical trials or preclinical studies may be required to be conducted.

The occurrence of any of these events could cause Janssen to further delay its Continuation Decision, or abandon the development of imetelstat entirely and terminate the Collaboration Agreement. Any termination of the Collaboration Agreement by Janssen would have a severe adverse effect on our results of operations, financial condition, business prospects and the future of imetelstat, any of which might cause us to cease operations.

Success in early clinical trials may not be predictive or indicative of results in current clinical trials or potential future clinical trials. Likewise, preliminary data from clinical trials should be considered carefully and with caution since the final data may be materially different from the preliminary data, particularly as more patient data become available.

A number of new drugs and biologics have shown promising results in preclinical studies and initial clinical trials, but subsequently have failed to establish sufficient safety and efficacy data to obtain necessary regulatory approvals to initiate commercial sale. There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. Product candidates in later stages of clinical trials may fail to show the desired benefit-risk profile despite having progressed through preclinical studies and initial clinical trials.

Data from our preclinical studies and Phase 1 and Phase 2 clinical trials of imetelstat, including the Pilot Study, as well as the results of the past or future internal data reviews conducted by Janssen for IMbark and IMerge, should not be relied upon as predictive or indicative of future clinical results, including any final results in the Pilot Study, IMbark or IMerge or the results in potential subsequent or larger-scale clinical trials of imetelstat. The results we obtained from the ET Trial and the Pilot Study and the results that have been obtained by Janssen in the internal data reviews conducted for IMbark and IMerge, as well as any future results that may be obtained by Janssen from IMbark and IMerge, may not predict the future therapeutic effect of imetelstat, if any, in hematologic myeloid malignancies, including MF and MDS. For example, the potential disease-modifying activity observed through molecular responses in the ET trial and partial or complete remissions observed in the Pilot Study may not be seen in current or future clinical trials of imetelstat. Since remaining patients in the treatment phase for the Pilot Study, IMbark and IMerge, including the expanded Part 1, continue to receive imetelstat, efficacy and safety data continue to be generated. Such additional and updated data may materially change the overall conclusions from the preliminary data reported for the Pilot Study, IMbark or IMerge. In addition, such additional and updated efficacy and safety data may not support an adequate benefit-risk profile to justify continued treatment of patients enrolled in current clinical trials of imetelstat. Also, the criteria used to assess efficacy in the Pilot Study have not been validated for clinical use and may not be considered by the FDA or other regulatory authorities to be accurate predictors of efficacy for different endpoints that may be required by the FDA or other regulatory authorities for Phase 3 clinical trials.

From time-to-time, preliminary or interim data from current clinical trials, such as the Pilot Study, IMbark and IMerge, or potential future clinical trials, may be reported or announced by Janssen, its investigators, or us. For example, preliminary results of the Pilot Study were presented by the investigator at the American Society of Hematology, or ASH, annual meeting in December 2013, and updated by the investigator at ASH in December 2014, and preliminary data were reported by the investigator from a cohort of MDS patients in the Pilot Study in December 2015. In addition, preliminary data from Part 1 of IMerge was announced in November 2017 and presented at ASH in December 2017. Since such data are preliminary, the final data from any final analysis which may be conducted, or any future analyses of the Pilot Study, IMbark or IMerge, or potential future clinical trials of imetelstat, may be materially different. In addition, changes in study design, including changes in patient enrollment criteria and target patient population, such as the decision to expand enrollment in Part 1 of IMerge for patients in a refined target population, may cause data from later stage clinical trials to differ significantly from data obtained in earlier clinical trials. Preliminary or interim results from the Pilot Study, IMbark or IMerge reported by us, Janssen or by investigators in those trials may not be reproduced in any potential future clinical trials of imetelstat, and thus should not be relied upon as indicative of future clinical results of imetelstat in MF, MDS or in any other hematologic myeloid malignancy. Preliminary or interim data should be considered carefully and with caution.

Material adverse differences in final data, compared to preliminary or interim data, from the Pilot Study, IMbark or IMerge, or potential future clinical trials of imetelstat, could result in a decision by Janssen to

discontinue the imetelstat program, further delay its Continuation Decision, or terminate the Collaboration Agreement, any of which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations. Even if final safety and/or efficacy data from the Pilot Study, IMbark or IMerge or potential future clinical trials of imetelstat are positive, significant additional clinical testing will be necessary to advance the future development of imetelstat in hematologic myeloid malignancies, including MF or MDS.

Clinical development involves a lengthy and expensive process with uncertain outcomes. Current clinical trials of imetelstat being conducted by Janssen, including IMbark, IMerge and the Pilot Study, and potential future clinical trials of imetelstat may fail to demonstrate sufficient safety and efficacy of imetelstat to warrant further development of the drug, which could prevent or further delay regulatory approval and commercialization of imetelstat.

Before regulatory approvals for the commercial sale of imetelstat can be obtained, clinical testing must be conducted to show that imetelstat is both safe and effective for use in each target indication. Such clinical testing is expensive, can take many years to complete and is inherently uncertain. Failure can occur at any time during clinical testing. Most product candidates that commence clinical trials are never approved as commercial products.

The clinical development of imetelstat will be influenced by results from current clinical trials being conducted by Janssen and potential future clinical trials of imetelstat. The advancement of current clinical trials of imetelstat and commencement of potential future clinical trials of imetelstat could be further delayed or abandoned for a variety of reasons, including as a result of failures or delays by Janssen in:

- demonstrating an adequate improvement in survival in relapsed or refractory MF in IMbark;
- otherwise demonstrating sufficient safety and efficacy of imetelstat in IMbark, IMerge and potential future clinical trials without safety issues, side effects or dose-limiting toxicities, including any additional or more severe safety issues in addition to those that have been observed to date in previous or ongoing clinical trials related to imetelstat, whether or not in the same indications or therapeutic areas;
- obtaining or maintaining regulatory clearances in the United States or other countries to conduct clinical trials, such as obtaining or maintaining regulatory clearances to commence, conduct or modify current or potential future clinical trials of imetelstat, in a timely manner, or at all;
- maintaining the INDs for imetelstat without such INDs being placed on full or partial clinical hold, suspended or subject to other requirements by the FDA or other regulatory authorities;
- properly designing, enrolling, conducting or completing: (i) IMerge, including collecting sufficient efficacy and safety data from the expanded Part 1 to assess the benefit-risk profile of imetelstat in the refined target patient population; and (ii) IMbark, by collecting longer-term efficacy and safety data to enable an assessment of overall survival, and promptly or adequately reporting data from such trials;
- properly conducting and/or completing the Pilot Study and promptly or adequately reporting data from such trial;
- obtaining or accessing necessary clinical data in accordance with appropriate clinical or quality practices to ensure complete data sets;
- responding to safety or futility findings by the data review committees of current clinical trials, including IMbark, IMerge and the Pilot Study, and potential future clinical trials of imetelstat, based on emerging data occurring during such clinical trials, such as significant systemic or organ toxicities, including severe cytopenias, hepatotoxicity, fatal bleeding with or without any associated thrombocytopenia, patient injury or death, or other safety issues, resulting in an unacceptable benefit-risk profile;
- manufacturing sufficient quantities of imetelstat or other clinical trial materials in a manner that meets the quality standards of the FDA and other regulatory authorities, and responding to any disruptions to drug supply, clinical trial materials or quality issues that may arise;

- ensuring the ability to manufacture imetelstat at acceptable costs for potential Phase 3 clinical trials and commercialization;
- obtaining sufficient quantities of any study-related treatments, materials (including comparator products, placebo or combination therapies) or ancillary supplies;
- obtaining acceptance by regulatory authorities of manufacturing changes, as well as successfully implementing any such manufacturing changes;
- complying with current and future regulatory requirements, policies or guidelines, including domestic and international laws and regulations pertaining to fraud and abuse, transparency, and the privacy and security of health information;
- reaching agreement on acceptable terms and on a timely basis, if at all, with collaborators and vendors located in the United States or foreign jurisdictions, including contract research organizations, laboratory service providers and clinical trial sites, on all aspects of clinical development;
- obtaining timely review and clearances by regulatory authorities of future protocol amendments which may be sought for IMbark, IMerge and potential future clinical trials of imetelstat; and
- obtaining institutional review board or ethics committee approval of clinical trial protocols or protocol amendments, including any future refinements to the trial design sought for Part 1 and Part 2, if any, of IMerge, or any potential protocol amendments for IMbark.

Failures or delays with respect to any of these events could adversely affect Janssen's ability to continue or successfully complete any current clinical trials of imetelstat or to initiate potential future clinical trials of imetelstat, which could increase development costs, further delay the timing of the Continuation Decision from Janssen, impair our ability to earn revenues from milestone payments or royalties under the Collaboration Agreement or cause Janssen to terminate the Collaboration Agreement, any of which could severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

If Janssen encounters difficulties enrolling or retaining patients in current or potential future clinical trials of imetelstat, including the expanded Part 1 of IMerge, clinical development and commercialization activities could be further delayed or otherwise adversely affected, which would cause our business and business prospects to be severely harmed.

The timely completion of a clinical trial in accordance with its protocol depends, among other things, on the ability to enroll a sufficient number of patients who remain in the trial until its conclusion. Janssen may experience difficulties in patient enrollment or retention in IMbark and IMerge, including the expanded Part 1, or potential future clinical trials of imetelstat, for a variety of reasons. The enrollment and retention of patients depends on many factors, including:

- the patient eligibility criteria in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoint;
- the proximity of patients to trial sites;
- the design of the trial;
- Janssen's ability to recruit and retain clinical trial investigators with the appropriate competencies and experience;
- clinicians' and patients' perceptions of the potential advantages of imetelstat, both in relation to other available therapies, including any new drugs that may be approved for the indications being investigated, and as a result of any preliminary data from current clinical trials;

- the ability to obtain and maintain patient consents; and
- the risk that patients enrolled in any imetelstat clinical trial will drop out of the trial before completion due to lack of efficacy, adverse side effects, investigator decision, slow progress to later stage clinical trials or personal issues.

In addition, IMbark and IMerge compete, and potential future clinical trials of imetelstat will compete, with other clinical trials for product candidates that are in the same therapeutic areas with imetelstat, and this competition will reduce the number and type of patients available to enroll or remain in the imetelstat clinical trials. Since the number of qualified clinical investigators is limited, IMbark and IMerge are being conducted, and potential future clinical trials of imetelstat are expected to be conducted, at the same clinical trial sites that competitors use, which will reduce the number of patients who are available for the imetelstat clinical trials at such clinical trial sites. Moreover, because imetelstat represents a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, rather than enroll patients into imetelstat clinical trials.

Delays in patient enrollment or the inability to retain or treat patients could result in increased costs, lead to incomplete data sets, or adversely affect the timing or outcome of current or potential future clinical trials of imetelstat, which could prevent completion of these trials and adversely affect the clinical development and commercialization of imetelstat. For example, delays in or the inability to collect sufficient safety and efficacy data from the expanded Part 1 of IMerge will delay or potentially preclude an assessment of clinical benefit, if any, in the refined target patient population in Part 1. For IMbark, if the data necessary for the protocol-specified primary analysis are not available as a result of patient withdrawals from the trial, insufficient follow-up time, and/or inability to collect follow-up data on such patients, then Janssen will be unable to assess overall survival in IMbark. If Janssen is unable to assess overall survival in IMbark or believes there is not an adequate improvement in survival, we believe Janssen would decide to discontinue the imetelstat program and terminate the Collaboration Agreement. However, Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS. Such occurrences would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

Obtaining regulatory clearances and approvals to continue clinical development of, and in the future, to potentially market imetelstat in the United States and other countries, is a costly and lengthy process, and we cannot predict whether or when regulatory authorities will permit additional imetelstat development or approve imetelstat for commercial sale.

Federal, state and local governments in the United States and governments in other countries have significant regulations in place that govern drug research and development and may prevent us, in collaboration with Janssen, from successfully conducting development efforts or from commercializing imetelstat. Delays in obtaining regulatory clearances and approvals or limitations in the scope of such clearances or approvals could:

- cause Janssen to terminate the Collaboration Agreement;
- impede or halt clinical development activities and plans;
- significantly harm the commercial potential of imetelstat;
- impose additional development costs;
- diminish any competitive advantages that may have been available; or
- adversely limit the amount of, or affect our ability to receive, any milestone payments or royalties under the Collaboration Agreement with Janssen.

Prior to initiating potential future clinical trials of imetelstat, clinical trial protocols must be submitted to the FDA or regulatory authorities in other countries. Questions or comments from these agencies regarding any protocol amendments of current clinical trials of imetelstat, including IMbark or IMerge, or protocols for potential future

clinical trials of imetelstat, must be addressed in a timely and adequate manner. The inability to timely or adequately address any questions, comments or requests for information from regulatory authorities could impede further clinical development of imetelstat, which could cause Janssen to further delay its Continuation Decision or discontinue the imetelstat program entirely and terminate the Collaboration Agreement, which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

Before Janssen can seek to obtain regulatory approval for the commercial sale of imetelstat, multiple clinical trials, including larger-scale Phase 3 clinical trials, will need to be conducted to demonstrate if imetelstat is safe and effective for use in a diverse population. If imetelstat cannot be developed in potential future clinical trials, including Phase 3 clinical trials, our Collaboration Agreement with Janssen will be negatively impacted and likely be terminated altogether, which would have severe adverse effects on our business and business prospects, and might result in the failure of our business.

If the interpretation by Janssen or us 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 which may cause Janssen to terminate the Collaboration Agreement. For example, the FDA and regulatory authorities in other countries may require more or different data than what has been generated from our preclinical studies and previous or ongoing clinical trials, such as IMbark, IMerge or the Pilot Study. In addition, delays or rejections of regulatory approvals, or limitations in marketing authorizations, may be encountered as a result of changes in the regulatory environment or regulatory policy during the period of product development and/or the period of review of any application for regulatory approval for imetelstat.

The benefit-risk profile of imetelstat will also affect the assessment by the FDA and regulatory authorities in other countries of the drug's cost-effectiveness and/or marketability, which assessment could prevent or limit its approval for marketing and successful commercial use. If regulatory submissions requesting approval to market imetelstat are submitted, the FDA and regulatory authorities in other countries may conclude that the overall benefit-risk profile of imetelstat treatment does not merit approval of imetelstat for marketing or further development for any indication. Any of these events could cause Janssen to terminate the Collaboration Agreement, which would severely harm our business and business prospects, and might cause us to cease operations.

Imetelstat must receive all relevant regulatory approvals before it may be marketed in the United States or other countries. Obtaining regulatory approval is a lengthy, expensive and uncertain process. For example in June 2016, the electorate in the United Kingdom voted in favor of exiting the European Union, and in March 2017, the Government of the United Kingdom initiated the formal procedure of withdrawal from the European Union. Although the impact of the withdrawal of the United Kingdom from the European Union will not be known for some time, this could lead to a period of considerable uncertainty in relation to the regulatory process in Europe, which could result in a delay in the review of regulatory submissions made in Europe by biotechnology and pharmaceutical companies, and could also lead to less efficient, more expensive, and potentially lengthier regulatory review processes for companies, including Janssen and us, who may seek to obtain regulatory approval for drug products in the European Union or the United Kingdom. Likewise, the Trump Administration has appointed and employed and will appoint and employ many new secretaries, directors and the like into positions of authority in the U.S. federal government dealing with the pharmaceutical and healthcare industries that may potentially have a negative impact on the prices and the regulatory pathways for pharmaceuticals. Such changes could adversely affect and/or delay the ability of Janssen to obtain approval of, and market and sell, imetelstat in the United States. In addition, 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 may be received could limit the use of imetelstat. We do not expect imetelstat to be approved for commercial sale for many years, if at all.

Even if the necessary time and resources are committed by Janssen, the required regulatory clearances and approvals may not be obtained for imetelstat. Further, if regulatory clearances and approvals are obtained to commence commercial sales of imetelstat, they may impose significant limitations on the indicated uses or other aspects of the product label for which imetelstat can be marketed. An approval might also be contingent on the

performance of costly additional post-marketing clinical trials. The occurrence of any of these events could limit the potential commercial use of imetelstat, and therefore delay the payment of potential milestone payments to us, or, if approved for commercial sale, could reduce the market demand for imetelstat and therefore result in decreased sales for Janssen and reduced royalties for us under the Collaboration Agreement. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

Although orphan drug designation has been granted to imetelstat for the treatment of MF and MDS, these designations may not be maintained, which would eliminate the benefits associated with orphan drug designation, including the potential for market exclusivity, which would likely result in the reduction of potential imetelstat sales revenue for Janssen, if any, and would likely harm our business and business prospects.

Although the FDA granted orphan drug designation to imetelstat in June 2015 for the treatment of MF and for the treatment of MDS in December 2015, and the European Medicines Agency, or EMA, granted it in December 2015 for the treatment of MF, Janssen may not be the first to obtain marketing approval of a product candidate for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States or the European Union, if granted, may be limited if Janssen seeks approval for an indication broader than the orphan-designated indication or such marketing exclusivity may be lost if the FDA or the EMA later determines that the request for orphan drug designation was materially defective, or if Janssen is unable to ensure and provide sufficient quantities of imetelstat to meet the needs of patients with the rare disease or condition. Further, even if Janssen obtains orphan drug exclusivity for imetelstat, that exclusivity may not effectively protect imetelstat from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan drug product is approved, the FDA or EMA can subsequently approve a different drug with the same active moiety for the same condition if the FDA or EMA concludes that the later drug is safer, more effective, or makes a major contribution to patient care. The occurrence of any of these events could result in decreased sales for Janssen and reduced royalties for us, and may harm our business and business prospects. In addition, orphan drug designation will neither shorten the development time nor regulatory review time for imetelstat, and does not give imetelstat any advantage in the regulatory review or approval process.

A fast track designation by the FDA, such as the Fast Track designation received for imetelstat, does not guarantee approval and may not lead to a faster development, regulatory review or approval process.

In October 2017, following submission by Janssen of an application to the FDA requesting fast track designation for the imetelstat clinical development program for the treatment of adult patients with transfusion-dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an ESA, the FDA notified Janssen that imetelstat has been granted such fast track designation. Fast track designation provides opportunities for frequent interactions with FDA review staff, as well as eligibility for priority review, if relevant criteria are met, and rolling review. Fast track designation is intended to facilitate and expedite development and review of a New Drug Application to address unmet medical needs in the treatment of serious or life-threatening conditions. However, fast track designation does not accelerate conduct of clinical trials or mean that the regulatory requirements are less stringent, nor does it ensure that imetelstat will receive marketing approval or that approval will be granted within any particular timeframe. In addition, the FDA may withdraw fast track designation if it believes that the designation is no longer supported by data emerging from the imetelstat clinical development program.

Failure to achieve continued compliance with government regulations could delay or halt commercialization of imetelstat, which we have exclusively outlicensed to Janssen.

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 import restrictions, seizure and withdrawal of the product from the market. If approved for commercial sale, future sales of imetelstat 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 or Janssen is unable to comply with these regulations, our ability to earn potential milestone payments and royalties from worldwide net sales of imetelstat would be materially and adversely 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;
- injunctions against the import, manufacture, distribution, sales and/or marketing of products; and
- criminal prosecution.

The imposition of any of these penalties or other commercial limitations could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, either of which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

RISKS RELATED TO MANUFACTURING IMETELSTAT

Failure by Janssen to manufacture or provide adequate clinical and commercial quantities of imetelstat on a timely basis, or at all, would result in a delay of clinical trials or regulatory approvals, or lost sales, and our business and business prospects could be severely harmed.

In accordance with the Collaboration Agreement, Janssen is responsible for the manufacture and management of the supply of imetelstat on a global basis for all clinical trials and commercial activities. Consequently, we are, and expect to remain, dependent on Janssen to appropriately supply imetelstat and other clinical trial materials. The process of manufacturing imetelstat is complex and subject to several risks, including:

- the ability to scale-up and attain sufficient production yields with appropriate quality control and quality assurance;
- reliance on third-party manufacturers and suppliers;
- supply chain issues, including the timely availability and shelf life requirements of raw materials and other supplies;
- shortage of qualified personnel; and
- compliance with regulatory requirements, which are less well-defined for oligonucleotide products than for small molecule drugs and vary in each country where imetelstat might be sold or used.

As a result of these risks, Janssen may not perform as agreed or may default in its obligations to supply imetelstat or other clinical trial materials for clinical trials and/or commercial activities. Janssen also may fail to deliver the required quantities of imetelstat or other clinical trial materials on a timely basis, or at required or applicable quality standards. If Janssen were to terminate the Collaboration Agreement, and we chose to pursue imetelstat development independently, we would be reliant upon Janssen for the manufacture and supply of adequate clinical quantities of imetelstat or other clinical trial materials, until such time as we could establish our own independent third-party manufacturers or suppliers, which might not be feasible for a significant period of time, and could significantly delay our ability to further develop imetelstat independently. Any such failure by Janssen to supply imetelstat or other clinical trial materials for clinical trials and/or commercial activities, including to us in the event that the Collaboration Agreement was terminated, could delay current and/or potential future clinical trials and any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if approved for commercial sale, could impair Janssen's ability to meet the market demand for imetelstat and therefore result in decreased sales for Janssen and reduced royalties for us which would severely and adversely affect our financial results, business and business prospects, and might cause us to cease operations.

If third parties that manufacture imetelstat fail to perform as needed, then the clinical and commercial supply of imetelstat will be limited.

Currently, third-party contractors perform certain process development or other technical and scientific work with respect to imetelstat, as well as supply starting materials and manufacture drug substance and drug product. Janssen, which is responsible for the manufacture and management of the supply of imetelstat on a global basis for clinical trials and, after any regulatory approval, all commercial activities, currently relies on these third-party contractors to produce and deliver sufficient quantities of imetelstat and other clinical trial materials to support clinical trials on a timely basis and to comply with applicable regulatory requirements. Janssen does not have direct control over these third-party personnel or operations. Reliance on these third-party manufacturers is subject to numerous risks, including:

- being unable to identify suitable third-party manufacturers, because the number of potential manufacturers is limited and regulatory authorities may require significant activities to validate and qualify any replacement manufacturer, which could involve new testing and compliance inspections;
- being unable to contract with third-party manufacturers on acceptable terms, or at all;
- the inability of third-party manufacturers to timely formulate and manufacture imetelstat or to produce imetelstat in the quantities or of the quality required to meet clinical and commercial needs;
- decisions by third-party manufacturers to exit the contract manufacturing business during the time required to supply clinical trials or to successfully produce, store and distribute products;
- compliance by third-party manufacturers with current Good Manufacturing Practice, or cGMP, standards mandated by the FDA and state agencies and other government regulations corresponding to foreign regulatory authorities;
- breach or termination of manufacturing contracts;
- capacity limitation and scheduling imetelstat as a priority in contracted facilities; and
- natural disasters that affect contracted facilities.

Each of these risks could lead to delays or shortages in drug supply, or the inability to manufacture drug supply necessary for preclinical and clinical activities, and commercialization. In addition, any decision by Janssen to self-manufacture imetelstat, change third-party manufacturers or make changes to manufacturing processes, product vial size or packaging, or formulations for imetelstat, could result in manufacturing delays. Manufacturing delays could adversely impact the completion of current clinical trials, such as IMbark and IMerge, or the initiation of potential future clinical trials, which may cause Janssen to terminate the Collaboration Agreement or further delay the timing of any Continuation Decision that Janssen could provide to us, either of which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

In addition, current third-party contractors and/or any other contractors utilized by Janssen 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 of imetelstat. These third-party contractors 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 commercially reasonable costs. Janssen currently does not have any long-term commitments or commercial supply agreements with any of the third-party contractors for imetelstat, 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 Janssen to find a replacement manufacturer on acceptable terms, or at all.

It may not be possible to manufacture imetelstat at costs or scales necessary to conduct clinical trials or potential future commercialization activities.

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. Therefore, imetelstat for clinical use is more expensive to manufacture than most other treatments currently available today or that may be available in the future. Similarly, the cost of manufacturing imetelstat for commercial use will need to be significantly lower than current costs in order for imetelstat to become a commercially successful product. Janssen may not be able to achieve sufficient scale increases or cost reductions necessary for successful commercial production of imetelstat. Failure to achieve necessary cost reductions could result in decreased sales for Janssen and reduced royalties for us, could negatively impact our collaboration with Janssen or could cause Janssen to terminate the Collaboration Agreement, any of which would materially and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

RISKS RELATED TO MANAGING OUR GROWTH AND OTHER BUSINESS OPERATIONS

We may not be able to successfully identify and acquire and/or in-license other oncology products, product candidates, programs or companies to grow and diversify our business, and, even if we are able to do so, we may not be able to successfully manage the risks associated with integrating any such products, product candidates, programs or companies into our business or we may otherwise fail to realize the anticipated benefits of these licenses or acquisitions.

We have exclusively outlicensed imetelstat, which was our sole product candidate, to Janssen. Accordingly, we are relying exclusively upon our collaborative relationship with Janssen to further develop, manufacture and commercialize imetelstat. To grow and diversify our business, we plan to continue our business development efforts to identify and seek to acquire and/or in-license other oncology products, product candidates, programs or companies. Such efforts have not yet resulted in any transaction, and may never result in a transaction. Future growth through acquisition or in-licensing will depend upon the availability of suitable products, product candidates, programs or companies for acquisition or in-licensing on acceptable prices, terms and conditions. Even if appropriate opportunities are available, we may not be able to acquire rights to them on acceptable terms, or at all. The competition to acquire or in-license rights to promising products, product candidates, programs and companies is fierce, and many of our competitors are large, multinational pharmaceutical and biotechnology companies with considerably more financial, development and commercialization resources, personnel, and experience than we have. In order to compete successfully in the current business climate, we may have to pay higher prices for assets than may have been paid historically, which may make it more difficult for us to realize an adequate return on any acquisition. In addition, even if we succeed in identifying promising products, product candidates, programs or companies, we may not have the ability to develop, obtain regulatory approval for and commercialize such opportunities, or the financial resources necessary to pursue them.

Even if we are able to successfully identify and acquire or in-license new products, product candidates, programs or companies, we may not be able to successfully manage the risks associated with integrating such products, product candidates, programs or companies into our business or the risks arising from anticipated and unanticipated problems in connection with an acquisition or in-licensing, including risks related to intellectual property, research, manufacturing, regulatory approval and/or commercialization. Further, while we seek to mitigate risks and liabilities of potential acquisitions through, among other things, due diligence, there may be risks and liabilities that such due diligence efforts fail to discover, that are not disclosed to us, or that we inadequately assess. Any failure in identifying and managing

these risks and uncertainties effectively would have a material adverse effect on our business. In any event, we may not be able to realize the anticipated benefits of any acquisition or in-licensing for a variety of reasons, including the possibility that a product candidate fails to advance to clinical development, proves not to be safe or effective in clinical trials, or fails to reach its forecasted commercial potential or that the integration of a product, product candidate, program or company gives rise to unforeseen difficulties and expenditures. Any failure in identifying and managing these risks and uncertainties would have a material adverse effect on our business.

In addition, acquisitions create other uncertainties and risks, particularly when the acquisition takes the form of a merger or other business consolidation. We may encounter unexpected difficulties, or incur unexpected costs, in connection with transition activities and integration efforts, which include:

- high acquisition costs;
- the need to incur substantial debt or engage in dilutive issuances of equity securities to pay for acquisitions;
- the potential disruption of our historical business and our activities under the Collaboration Agreement;
- the strain on, and need to expand, our existing operational, technical, financial and administrative infrastructure;
- our lack of experience in late-stage product development and commercialization;
- the difficulties in assimilating employees and corporate cultures;
- the difficulties in hiring qualified personnel and establishing necessary development and/or commercialization capabilities;
- the failure to retain key management and other personnel;
- the challenges in controlling additional costs and expenses in connection with and as a result of the acquisition;
- the need to write down assets or recognize impairment charges;
- the diversion of our management's attention to integration of operations and corporate and administrative infrastructures; and
- any unanticipated liabilities for activities of or related to the acquired business or its operations, products or product candidates.

If we fail to integrate or otherwise manage an acquired business successfully and in a timely manner, resulting operating inefficiencies could increase our costs more than we planned, could negatively impact the market price of our common stock and could otherwise distract us from execution of our strategy. Failure to maintain effective financial controls and reporting systems and procedures could also impact our ability to produce timely and accurate financial statements.

In addition, the Collaboration Agreement with Janssen prohibits us from commercializing, under the intellectual property we have licensed exclusively to Janssen, any substance whose identified or known mechanism of action is telomerase inhibition. Further, if we exercise our U.S. Co-Promotion Option under the Collaboration Agreement, we will be required to certify to Janssen at the time of exercising our U.S. Co-Promotion Option that we are not marketing or promoting, and have no right to market or promote, any such products for any oncology indication. Our right to co-promote in the United States may be terminated by Janssen if we develop or commercialize a product for treating an oncology indication that acts through the same mechanism of action as imetelstat or that is substitutable for imetelstat. Accordingly, our Collaboration Agreement with Janssen could adversely affect our ability to acquire or in-license, or to research, develop or market, promising products, product candidates or programs.

We may be unable to successfully retain or recruit key personnel to support our collaboration with Janssen or to manage any future growth.

Our future growth and success depend to a significant extent on the skills, experience and efforts of our executive officers and key members of our staff. We face intense competition for qualified individuals from numerous pharmaceutical, biopharmaceutical and biotechnology companies, as well as academic and other research institutions. The previous restructurings we implemented, as well as the fact that we exclusively outlicensed imetelstat, which was our sole product candidate, to Janssen, and the uncertainties regarding our ability to diversify our business or related to the continued development of imetelstat by Janssen, 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. In addition, if we acquire or in-license new products, product candidates, programs or companies as a result of our business development efforts, we may not be able to successfully retain or recruit any executive officers or key staff members knowledgeable about such new products, product candidates, programs or companies. Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including joint committees and working groups, to manage worldwide regulatory, development, manufacturing and commercialization activities for imetelstat, and we have ongoing responsibilities to oversee and participate in the collaboration with Janssen. In addition, we remain responsible for prosecuting, at Janssen's direction, the patents we exclusively licensed to Janssen, and have sole responsibility for those patents that were non-exclusively licensed to Janssen. If we are unable to successfully retain, motivate and incentivize our personnel or attract or assimilate other highly qualified management and development personnel in the future on acceptable terms, our ability to support the Collaboration Agreement with Janssen and any future growth could be impaired, and our business and the price of our common stock would be adversely impacted.

We have not yet negotiated our agreement with Janssen specifying all of the terms for our co-promotion of imetelstat should we exercise our U.S. Co-Promotion Option. In addition, we do not have a sales force and may not develop an effective one, if at all.

Pursuant to the Collaboration Agreement with Janssen, we have a U.S. Co-Promotion Option if we exercise our U.S. Opt-In Rights. Assuming we exercise the U.S. Co-Promotion Option, we can elect to provide 20% of the U.S. imetelstat selling effort with Geron sales force personnel, in lieu of funding 20% of U.S. promotion costs upon regulatory approval and commercial launch of imetelstat in the United States. While the Collaboration Agreement includes the material terms of our U.S. Co-Promotion Option, we and Janssen mutually agreed to negotiate a separate agreement specifying detailed activities and responsibilities with respect to the marketing and co-promotion of imetelstat following our election to exercise our U.S. Co-Promotion Option. If Janssen makes an affirmative Continuation Decision, and we subsequently exercise our U.S. Opt-In Rights and U.S. Co-Promotion Option, we will need to negotiate this separate agreement with Janssen and, as a result, Janssen may impose restrictions or additional obligations on us, including financial obligations. Any restrictions or additional obligations may restrict our co-promotion activities or involve more significant financial or other obligations than we currently anticipate. In addition, we have no sales experience as a company, and there are risks involved with establishing our own sales force capabilities, including:

- incurring substantial expenditures to develop a sales force and function;
- exposure to unforeseen costs and expenses; and
- being unable to effectively recruit, train or retain sales personnel.

Accordingly, we may be unable to establish our own sales force, which would delay or preclude us from participating in co-promoting imetelstat in the United States. In addition, because of our current lack of expertise in sales operations, any sales force we establish may not be effective, or may be less effective than any sales force that Janssen utilizes to promote imetelstat. In such event, the commercialization of imetelstat may be adversely affected, since we would be wholly reliant on Janssen's sales efforts, and this could materially and adversely affect any sales milestone or royalties we may receive under the Collaboration Agreement.

The Collaboration Agreement limits our ability to transfer our U.S. Co-Promotion Option to a potential acquirer.

Although the Collaboration Agreement permits us to be acquired by any company, our right to transfer our U.S. Co-Promotion Option in the case of an acquisition, merger, consolidation, share exchange, business combination, recapitalization, sale of a majority of assets or similar transaction is limited, and subject to Janssen's sole discretion under certain circumstances. If we are acquired outside of such limited circumstances, then we may not be able to transfer the U.S. Co-Promotion Option to such acquirer as part of the acquisition. This limiting provision may discourage potential acquisition bids for us or lower our value, thus preventing holders of our common stock from benefiting from what they may believe are the positive aspects of an acquisition, including the potential realization of a higher rate of return on their investment from this type of transaction.

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 is alleged to have injured patients, including any injuries alleged to arise from any hepatotoxicity or hemorrhagic event associated with the use of imetelstat. We currently have limited clinical trial liability insurance, and we may not be able to maintain this type of insurance for any clinical trials, including clinical trials that we may conduct under a Geron IDP or in collaboration with Janssen under the Collaboration Agreement. 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.

We have been, and may in the future be, involved in securities-related legal actions that are expensive and time consuming. Any securities-related legal actions, if resolved adversely, could harm our business, financial condition, or results of operations.

Securities-related class action lawsuits and/or derivative lawsuits have often been brought against 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.

We and certain of our officers were named as defendants in two purported class action securities lawsuits filed in the United States District Court for the Northern District of California, or the California District Court, as well as a third securities lawsuit, not styled as a class action, which was transferred to the California District Court. These three cases, or the Class Action Lawsuits, were consolidated for all purposes and settled in July 2017. In connection with the settlement, in April 2017, we paid $250,000 and our insurance providers paid $6.0 million to a settlement escrow account to be paid to members of the settlement class, less payment of attorneys' fees and costs to plaintiff's counsel.

It is possible that additional suits will be filed, or allegations received from stockholders naming us and/or our officers and directors as defendants with respect to these same or other matters. Monitoring, initiating and defending against legal actions is time-consuming for our management, is likely to be expensive and may detract from our ability to fully focus our internal resources on our business activities. We could be forced to expend significant resources in the settlement or defense of any additional lawsuits, and we may not prevail in such lawsuits. We have not established any reserve for any potential liability relating to any additional lawsuits. It is possible that we could, in the future, incur judgments or enter into settlements of claims for monetary damages. A decision adverse to our interests in any such lawsuit, or in similar or related litigation, could result in the payment of substantial damages, or possibly fines, and could have a material adverse effect on our business, cash flow, results of operations and financial condition.

We may be subject to litigation, including securities-related litigation, if the results of our business and collaboration activities are not successful, and such litigation would be costly to defend or pursue and uncertain in its outcome.

Our business may bring us into conflict with our licensees, licensors, or others with whom we have contractual or other business relationships, or with our competitors or others whose interests differ from ours. If we are unable to resolve those conflicts on terms that are satisfactory to all parties, we may become involved in litigation brought by or against us.

On November 13, 2014, we announced that we had entered into the Collaboration Agreement with Janssen. We may face litigation arising from or related to the Collaboration Agreement or the transactions contemplated thereby, including if we are unable to generate substantial value under the Collaboration Agreement with Janssen or such collaboration is otherwise unsuccessful. For example, as a result of possible disagreements with Janssen, we may become involved in litigation or arbitration, which would be time-consuming and expensive. Possible disagreements with Janssen could include disagreements regarding the development and/or commercialization of imetelstat, interpretation of the Collaboration Agreement and ownership of proprietary rights. In addition, in certain circumstances we may believe that a particular milestone under the Collaboration Agreement has been achieved, and Janssen may disagree with our belief. In that case, receipt of that milestone payment may be delayed or may never be received, which would adversely affect our financial condition and may require us to adjust our operating plans. While the Collaboration Agreement provides for a joint governance structure to oversee and manage worldwide regulatory, development, manufacturing and commercialization activities for imetelstat, Janssen generally will, subject to limited exceptions, have the deciding vote in the event of any disagreement. In any event, the joint governance structure contemplated by the Collaboration Agreement will be dissolved in the event that Janssen makes an affirmative Continuation Decision and we do not exercise our U.S. Opt-In Rights, which would preclude our ability to participate in any further decision-making for imetelstat. Reliance on a joint governance structure also subjects us to the risk that changes in key Janssen management personnel that are members of the various joint committees may materially and adversely affect the functioning of these committees, which could significantly delay or preclude imetelstat development and/or commercialization.

The Collaboration Agreement could also result in litigation arising out of any claims that our stockholders suffered financial losses due to the transaction, the approval of our stockholders was required under applicable law or otherwise should have been obtained prior to the completion of the transaction, or that our officers and directors breached their fiduciary duties in connection with the approval and completion of the transaction. Although we believe that stockholder approval was not required under applicable law in order to complete our transaction with Janssen, and therefore we neither sought nor intend to seek such stockholder approval, it is possible that persons who were stockholders at the time of the transaction may claim that their approval was required, in which case litigation could follow, which could result in substantial damages to us and/or could negatively affect our rights and obligations, or result in the termination of, the Collaboration Agreement.

Likewise, our stockholders may believe that the financial and other terms of the Collaboration Agreement are not favorable to either us or our stockholders, including any belief that the potential payments we may receive under the Collaboration Agreement are inadequate. Litigation brought by our stockholders challenging the validity of, or financial losses resulting from the Collaboration Agreement could also result in claims against us by Janssen, and the Collaboration Agreement provides for indemnification by us of Janssen against all losses and expenses relating to breaches of our representations, warranties and covenants in the Collaboration Agreement, which could expose us to further financial obligations and damages. The occurrence of any one or more of the above could have a significant adverse impact on our business and financial condition.

In addition, if the results of our business and collaboration activities are not successful, including without limitation, for example, if:

- we receive a negative Continuation Decision from Janssen or Janssen otherwise terminates the Collaboration Agreement;
- any preliminary or final results of IMbark and/or IMerge, including any future internal data reviews of these trials, are negative under the criteria set forth in the respective protocols or otherwise, are inconclusive, or do not otherwise demonstrate adequate efficacy or clinical benefit, including if Janssen

is unable to assess overall survival in IMbark or believes there is not an adequate improvement in survival in IMbark;

- serious adverse events are encountered in current and potential future clinical trials of imetelstat; or
- in the event that we acquire and/or in-license other oncology products, product candidates, programs or companies, we do not achieve the perceived benefits of any such transaction as rapidly or to the extent anticipated by financial analysts or investors, or any such transaction is otherwise unsuccessful;

our stock price would decline significantly, and future litigation may result. In addition, allegations against us may be made related to the duration and nature of follow-up of patients, or any other activities conducted by Janssen or us in current and potential future clinical trials of imetelstat, and the nature and timing of our disclosures related to efficacy or safety data observed in current and potential future clinical trials of imetelstat may be alleged to have been inadequate or incomplete.

Monitoring, initiating and defending against legal actions is time-consuming for our management, likely to be expensive and may detract from our ability to fully focus our internal resources on our business activities. In addition, despite the availability of insurance, we may incur substantial legal fees and costs in connection with litigation. Lawsuits are subject to inherent uncertainties, and defense and disposition costs depend upon many unknown factors. Lawsuits could result in judgments against us that require us to pay damages, enjoin us from certain activities, or otherwise negatively 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 our stockholders' investment in our common stock.

RISKS RELATED TO PROTECTING OUR INTELLECTUAL PROPERTY

We remain responsible for prosecuting, at Janssen's direction, the patents we have exclusively licensed to Janssen. The success of our collaboration with Janssen will depend on our ability to protect our technologies and imetelstat through patents and other intellectual property rights.

Protection of our proprietary technology is critically important to our business, especially with respect to our collaboration with Janssen. Our success will depend in part on our ability to obtain, maintain, enforce and extend our patents and maintain trade secrets, both in the United States and in other countries. Our patents may be challenged, invalidated or circumvented, and our patent rights may not provide proprietary protection or competitive advantages to us or Janssen. In the event that we are unsuccessful in obtaining, maintaining, and enforcing our patents and other intellectual property rights, the value of our technologies and imetelstat will be adversely affected, and we or Janssen may not be able or willing to further develop or commercialize imetelstat. Loss or impairment of our intellectual property related to imetelstat might delay or halt ongoing or potential future clinical trials of imetelstat and any applications for regulatory approval, and therefore delay or halt the payment of potential milestone payments to us under the Collaboration Agreement. Further, if imetelstat is approved for commercial sale, such events could impair Janssen's ability to sell imetelstat and therefore result in decreased sales for Janssen and reduced royalties for us. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, which would materially and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease operations.

Changes in U.S. or foreign patent law or interpretations of such patent laws could diminish the value of our patents in general, thereby impairing our ability to protect our technologies and imetelstat.

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 or defend issued patents, is uncertain.

Since the publication of discoveries in scientific or patent literature tends to lag behind actual discoveries by at least several months and sometimes several years, the persons or entities that we 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 the future success of imetelstat. Thus, 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 or any joint inventions that we may develop with Janssen. 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.

A number of significant changes to U.S. patent law occurred when the Leahy-Smith America Invents Act, or the AIA, was signed into law on September 16, 2011. These include provisions that affect the way patent applications are examined and may affect patent litigation. 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, the AIA limits where a patentee may file a patent infringement suit. 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.

U.S. court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. For example, on June 13, 2013, the U.S. Supreme Court, or the Court, issued a decision in *Association for Molecular Pathology v. Myriad Genetics, Inc.* holding that claims to isolated genomic DNA were not patentable subject matter, but claims to complementary DNA, or cDNA, molecules were patentable subject matter. 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. In addition, court rulings in cases such as *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litig.* and *Promega Corp. v. Life Technologies Corp.* have also narrowed the scope of patent protection available in certain circumstances. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events may have created uncertainty with respect to the value of certain patents we have previously obtained or in-licensed.

In addition, in June 2016, the electorate of the United Kingdom voted to exit the European Union, and in March 2017 the Government of the United Kingdom initiated the formal procedure of withdrawal from the European Union. While the exit of the United Kingdom from the European Union is to be completed in 2019, the exact timing of the withdrawal and the resulting effect of withdrawal will not be known for some time, which could lead to a period of considerable uncertainty relating to our ability to obtain and maintain Supplementary Protection Certificates (SPCs) of our products based on our United Kingdom patents and our ability to establish and maintain European trademarks in the United Kingdom.

Depending on decisions by the U.S. federal courts, the Patent Office and similar authorities in foreign jurisdictions, 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. Occurrence of these events and/or significant impairment of our imetelstat patent rights would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and could cause Janssen to terminate the Collaboration Agreement, which might cause us to cease operations.

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

Our patents may be challenged through administrative or judicial proceedings, which could 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 or litigation, any of which could delay or prevent the issuance of patents, or result in the loss of issued patent rights.

Under the AIA, interference proceedings between patent applications filed on or after March 16, 2013 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, such as inter partes review, or IPR, covered business method post-grant reviews and other post-grant reviews. This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard necessary to invalidate a patent claim in Patent Office proceedings compared to the evidentiary standard in U.S. federal court, a third party could potentially provide evidence in a Patent Office proceeding sufficient for the Patent Office to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party could attempt to use the Patent Office procedures to invalidate patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. 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. In addition, the IPR process under the AIA permits any person, whether they are accused of infringing the patent at issue or not, to challenge the validity of certain patents. As a result, entities associated with hedge funds have challenged valuable pharmaceutical patents through the IPR process. Significant impairment of our imetelstat patent rights would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and could cause Janssen to terminate the Collaboration Agreement, which might cause us to cease operations.

Certain jurisdictions, such as Europe, New Zealand and Australia, permit oppositions to be filed against granted patents or patents proposed to be granted. Under the Collaboration Agreement, Janssen could commercialize imetelstat internationally if approved by regulatory authorities for commercial sale. Therefore, securing both proprietary protection and freedom to operate outside of the United States is important to the Collaboration Agreement with Janssen and our business. Opposition proceedings require significant time and costs, and if we are unsuccessful or are unable to commit these types of resources to protect our imetelstat patent rights, we could lose our patent rights and we and/or Janssen could be prevented or limited in the development and commercialization of imetelstat.

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, IPRs, post-grant proceedings, oppositions, re-examinations, litigation or other means will likely increase. For example, litigation may arise as a result of our decision to enforce our patent rights against third parties. Challenges to our patents through these procedures would be extremely expensive and time-consuming, even if the outcome was favorable to us. An adverse outcome in a patent dispute could severely harm our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, or could otherwise have a material adverse effect on our business, and might cause us to cease operations, by:

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

We or Janssen may be subject to infringement claims that are costly to defend, and as to which we may be obligated to indemnify Janssen or obtain unblocking licenses, and such claims may limit our or Janssen's ability to use disputed technologies and prevent us or Janssen from pursuing research, development, manufacturing or commercialization of imetelstat.

The commercial success of imetelstat will depend upon our and Janssen's ability to research, 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 potential competitors, have substantial patent portfolios. In the event our technologies infringe the rights of others or require the use of discoveries and technologies controlled by third parties, we or Janssen may be prevented from pursuing research, development,

manufacturing or commercialization of imetelstat, or may be required to obtain licenses to those patents or other proprietary rights or develop or obtain alternative technologies. For example, we are aware that certain third parties have or may be prosecuting patents and patent estates that may relate to imetelstat, and while we believe these patents will expire before imetelstat is 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(s) of these patents will assert claims against us and/or Janssen in the future. Under the Collaboration Agreement, we are obligated under certain circumstances to indemnify Janssen from any claim of infringement of the patent rights of third parties in Janssen's development, manufacture or commercialization of imetelstat, or to obtain unblocking licenses from such third parties, at our cost.

Since we cannot be aware of all intellectual property rights potentially relating to imetelstat and its uses, we do not know with certainty that imetelstat, or the intended commercialization thereof, does not and will not infringe or otherwise violate any third party's intellectual property. Any infringement claims against us or Janssen would likely be expensive to resolve, and the cost of any indemnification of Janssen or unblocking license that we could be required to obtain under the Collaboration Agreement is unpredictable and could be significant. If we or Janssen are unable to resolve an infringement claim successfully, we or Janssen could be subject to an injunction which would prevent us or Janssen from commercializing imetelstat, and could also require us or Janssen to pay substantial damages. In addition to infringement claims, in the future we or Janssen may also be subject to other claims relating to intellectual property, such as claims that we or Janssen have misappropriated the trade secrets of third parties. Provided that Janssen continues to progress the development of imetelstat, we expect to see more efforts by others to obtain patents that are positioned to cover imetelstat. Our success therefore depends significantly on our and Janssen's ability to operate without infringing patents and the proprietary rights of others.

We or Janssen may become aware of discoveries and technologies controlled by third parties that are advantageous to developing or manufacturing imetelstat. Under such circumstances, we or Janssen may initiate negotiations for licenses to other technologies as the need or opportunity arises. We or Janssen may not be able to obtain a license to a technology required for the research, development, manufacture or commercialization of imetelstat on commercially favorable terms, or at all, or such licenses may be terminated on certain grounds, including as a result of our or Janssen's failure to comply with the obligations under such licenses. If we or Janssen do not obtain a necessary license or if such a license is terminated, we or Janssen may need to redesign such technologies or obtain rights to alternative technologies, which may not be possible, and even if possible, could cause delays in the development efforts for imetelstat and could increase the development and/or production costs of imetelstat. In cases where we or Janssen are unable to license necessary technologies, we and/or Janssen could be subject to litigation and prevented from researching, developing, manufacturing or commercializing imetelstat, and in certain circumstances we may be required to indemnify Janssen for infringement claims arising from Janssen's research, development, manufacture or commercialization of imetelstat, which could materially and adversely impact our business. Failure by us or Janssen to obtain rights to alternative technologies or a license to any technology that may be required to research, develop, manufacture or commercialize imetelstat would delay potential future clinical trials of imetelstat and any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if imetelstat is approved for commercial sale, could impair Janssen's ability to sell imetelstat and therefore result in decreased sales for Janssen and reduced royalties for us. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, which would materially and adversely affect our business, and might cause us to cease operations.

We may become involved in disputes with Janssen or any past or future collaborator(s) over intellectual property inventorship or ownership, and publications by us or Janssen, or by investigators, scientific consultants, research collaborators or others could impair our ability to obtain patent protection or protect our proprietary information, which, in either case, could have a significant impact on our business.

Inventions discovered under research, material transfer or other such collaborative agreements, including our Collaboration Agreement with Janssen, may become jointly owned by us and the other party to such agreements in some cases and the exclusive property of either party in other cases. Under some circumstances, it may be difficult to determine who invents and owns a particular invention, or whether it is jointly owned, and disputes can arise regarding inventorship and ownership of those inventions. These disputes could be costly and time-consuming and an unfavorable outcome could have a significant adverse effect on our business if we were not able to protect or

license rights to these inventions. In addition, clinical trial investigators, scientific consultants and research collaborators generally have contractual rights to publish data and other proprietary information, subject to review by us and/or Janssen. Publications by us or Janssen, or by investigators, scientific consultants, previous employees, research collaborators or others, either with permission or in contravention of the terms of their agreements or otherwise, may impair the ability to obtain patent protection or protect proprietary information which would have a material adverse effect on our business and could cause Janssen to terminate the Collaboration Agreement, which might cause us to cease operations.

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.

In May 2016, the Defend Trade Secrets Act of 2016, or the DTSA, was enacted, providing a federal cause of action for misappropriation of trade secrets. Under the DTSA, an employer may not collect enhanced damages or attorney fees from an employee or contractor in a trade secret dispute brought under the DTSA, unless certain advanced provisions are observed. We cannot provide assurance that our existing agreements with employees and contractors contain notice provisions that would enable us to seek enhanced damages or attorneys' fees in the event of any dispute for misappropriation of trade secrets brought under the DTSA.

Significant disruptions of information technology systems, including cloud-based systems, or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including cloud-based systems, to support business processes as well as internal and external communications. Our computer systems are potentially vulnerable to breakdown, malicious intrusion and computer viruses that may result in the impairment of key business processes. Such disruptions and breaches of security could have a material adverse effect on our business, financial condition and results of operations.

In addition, our data security and information technology systems are potentially vulnerable to data security breaches, whether by employees or others, that may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, public disclosure of sensitive clinical or commercial data, and the exposure of personally identifiable information (including sensitive personal information) of our employees, collaborators, clinical trial patients and others. A data security breach or privacy violation that leads to disclosure or modification of or prevents access to patient information, including personally identifiable information or protected health information, could result in increased costs or loss of revenue as a result of:

- harm to our reputation;
- additional compliance obligations under federal and/or state breach notification laws;
- requirements for mandatory corrective action to be taken by us; and
- requirements to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect personal data.

If we are unable to prevent such data security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other regulatory penalties because of lost or misappropriated information, including sensitive patient data. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices that access

confidential information increases the risk of data security breaches, which could lead to the loss of confidential information, trade secrets or other intellectual property. While we have implemented security measures to protect our data security and information technology systems, such measures may not prevent such events.

RISKS RELATED TO OUR FINANCIAL POSITION AND NEED FOR ADDITIONAL FINANCING

Although we reported a small profit for the year ending December 31, 2015, we have a history of losses and anticipate continued future losses, and our continued losses could impair our ability to sustain operations.

Until 2015, we had never been profitable and we had incurred operating losses every year since our operations began in 1990. While we were profitable in 2015 due to the recognition of revenue in connection with the upfront payment from Janssen under the Collaboration Agreement, we expect to incur additional operating losses and, as clinical development activities for imetelstat continue under our Collaboration Agreement with Janssen, our operating losses may increase in size. As of December 31, 2017, our accumulated deficit was approximately $985.8 million. Losses have resulted principally from costs incurred in connection with our research and development activities and from general and administrative costs associated with our operations.

Substantially all of our revenues to date have been payments under collaborative agreements and milestones, royalties and other revenues from our licensing arrangements. Any revenues generated from our licensing arrangements or ongoing collaborative agreements, including the Collaboration Agreement with Janssen, may not be sufficient alone to sustain our operations. For example, we expect revenues under our license agreements related to our telomerase technology to decline significantly in the coming years, and to be eliminated by the end of 2019, due to upcoming patent expirations on such technology. In addition, there can be no assurance that we will receive any milestone payments or royalties from Janssen in the future. We may be unsuccessful in entering into any new corporate collaboration, partnership or license agreements that result in revenues, or existing collaborative agreements or license arrangements, such as the Collaboration Agreement with Janssen, may be terminated or expire.

We also expect to experience negative cash flow for the foreseeable future as we fund our operations and capital expenditures. This will result in decreases in our working capital, total assets and stockholders' equity, which may not be offset by milestone payments or royalties from Janssen or by future financings. We will need to generate significant revenues to achieve consistent future profitability. We may not be able to generate these revenues under the Collaboration Agreement with Janssen through milestone payments or royalties, and we may never achieve consistent future profitability. Even if we do become profitable in the future, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to achieve consistent future profitability could negatively impact the market price of our common stock and our ability to sustain operations.

We may require additional capital to support development and commercialization of imetelstat in collaboration with Janssen and to otherwise grow our business, and our ability to obtain the necessary funding is uncertain.

We may need additional capital resources in order to support development and commercialization of imetelstat, especially if we elect to exercise our U.S. Opt-In Rights and U.S. Co-Promotion Option under the Collaboration Agreement and potentially independently pursue imetelstat development under our own IDP, and to otherwise support the future growth of our business through the potential acquisition and/or in-licensing of other oncology products, product candidates, programs or companies. We cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement with Janssen and potential future sales of our common stock, including pursuant to our 2015 Sales Agreement with MLV, will be sufficient to fund future planned activities. 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;
- whether Janssen discontinues development of imetelstat and/or terminates the Collaboration Agreement, and we choose to develop imetelstat ourselves;

- further changes or delays in Janssen's development plans for imetelstat, including changes to or further expansion of or delays in ongoing clinical trials decided upon by Janssen or required by regulatory authorities, such as clinical holds or other requirements, or any other factors;
- the achievement of development, regulatory and sales milestones resulting in payments to us from Janssen under the Collaboration Agreement and the timing of receipt of such payments, if any;
- to the extent permitted under the Collaboration Agreement, whether we independently pursue imetelstat development under our own IDP;
- our potential reimbursement obligations to Janssen if any data from a Janssen IDP support approval by regulatory authorities in the United States or other countries;
- in the event that Janssen provides an affirmative Continuation Decision to us, whether we then elect our U.S. Opt-In Rights to share further U.S. development and promotion costs for imetelstat beyond IMbark or IMerge under the Collaboration Agreement, including our share of development costs incurred to date by Janssen that we will be required to reimburse if we exercise our U.S. Opt-In Rights;
- Janssen's ability to meaningfully reduce manufacturing costs of imetelstat;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization of imetelstat, including the number of indications being pursued, subject to clearances and approvals by the FDA and other regulatory authorities;
- the time and costs involved in obtaining regulatory clearances and approvals in the United States and in other countries;
- Janssen's ability to successfully market and sell imetelstat, upon regulatory approval or clearance, in the United States and other countries;
- if we exercise our U.S. Opt-In Rights, our decision to also exercise our U.S. Co-Promotion Option, including the costs and timing of building a U.S. sales force;
- the sales price for imetelstat;
- the availability of coverage and adequate third-party reimbursement for imetelstat;
- the timing, receipt and amount of royalties under the Collaboration Agreement on worldwide net sales of imetelstat, upon regulatory approval or clearance, if any;
- the cost of acquiring and/or in-licensing other oncology products, product candidates, programs or companies, if any;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization of any acquired or in-licensed oncology products, product candidates, programs, or companies, including the number of indications being pursued, subject to clearances and approvals by the FDA and other regulatory authorities;
- expenses associated with potential future litigation; 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. If our existing capital resources, future interest income, and potential milestone payments and royalties under the Collaboration Agreement with Janssen are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations, including pursuant to our 2015 Sales Agreement with MLV.

Further, if the Collaboration Agreement is terminated, including as a result of Janssen's failure to provide an affirmative Continuation Decision to us, or for any other reason, we would not receive any milestone payments or royalties under the Collaboration Agreement, and then, depending on the timing of such event, we would be required to fund all clinical development, manufacturing and commercial activities for imetelstat should we elect to continue the development of imetelstat ourselves, which would require us to raise substantial additional capital or

establish alternative collaborations with third-party collaboration partners, which may not be possible. If the Collaboration Agreement is terminated and we are unable to raise additional capital or establish alternative collaborations with third-party collaboration partners for imetelstat, the development of imetelstat would be discontinued, which might cause us to cease operations. Additional financing through public or private equity financings, including pursuant to our 2015 Sales Agreement with MLV, 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. In this regard, continued volatility and instability in the global financial markets and political climate could adversely affect our ability to raise additional funds through financings and the terms upon which we may raise those funds.

Our ability to raise additional funds will be severely impaired in the event of:

- further changes or delays in Janssen's development plans for imetelstat;
- a failure or inability to show adequate safety or efficacy of imetelstat in current or potential future clinical trials, which may result in a decision by Janssen to delay or discontinue further development of imetelstat; or
- a termination of the Collaboration Agreement or if our collaboration with Janssen is otherwise unsuccessful.

If sufficient capital is not available, we may be unable to fulfill our funding obligations under the Collaboration Agreement with Janssen, resulting in our breach of the Collaboration Agreement, which could lead to Janssen paying lower milestone payments and lower royalties to us under a reduced royalty tier. This would have a material adverse effect on our results of operations and financial condition.

Moreover, in order to grow and diversify our business, we plan to continue our business development efforts to identify and seek to acquire and/or in-license other oncology products, product candidates, programs or companies. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness, seek equity capital or both, including pursuant to our 2015 Sales Agreement with MLV. In addition, there can be no assurance that sufficient additional capital would be available to us in order to pursue any of these opportunities.

The recently passed comprehensive tax reform bill could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law new legislation that significantly revises the Internal Revenue Code of 1986, as amended. The newly enacted federal income tax law, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions). Notwithstanding the reduction in the corporate income tax rate, the overall impact of the new federal tax law is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain if and to what extent various states will conform to the newly enacted federal tax law. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. We urge our stockholders to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

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

Our net operating loss carryforwards could expire unused and be unavailable to offset future income tax liabilities. Under the newly enacted federal income tax law, federal net operating losses incurred in 2018 and in

future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, and corresponding provisions of state law, 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 which could adversely impact our financial position.

RISKS RELATED TO 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, 2008 and December 31, 2017, our stock has traded as high as $9.24 per share and as low as $0.91 per share. Between January 1, 2015 and December 31, 2017, the price has ranged between a high of $5.30 per share and a low of $1.74 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 the research and development of imetelstat, including results of, further delays in, discontinuation of, or further modifications or refinements to any clinical trials of imetelstat as a result of any internal data reviews or decisions by joint governance committees, and investor perceptions thereof;
- not receiving timely regulatory clearances or approvals in any jurisdiction, whether within or outside of the United States, including, if we, Janssen or future investigators do not obtain regulatory clearance to commence, conduct or continue clinical trials of imetelstat in MF, MDS or any additional hematologic myeloid malignancies in a timely manner or at all, or to amend any clinical trial protocol with respect to the conduct of IMerge, IMbark or any future clinical trial of imetelstat;
- developments in our collaboration with Janssen, including the termination, modification or amendment of the Collaboration Agreement, or disputes regarding the collaboration;
- announcements regarding the safety of imetelstat;
- announcements regarding regulatory developments concerning imetelstat, including announcements similar to our March 2014 announcement that the FDA had placed a full clinical hold on our IND for imetelstat;
- the experimental nature of imetelstat;
- perception by our stockholders about the adequacy of potential payments we may receive under the Collaboration Agreement;
- the demand in the market for our common stock;
- announcements of technological innovations, new commercial products, or clinical progress or lack thereof by us, our collaborators, licensees, partners or our competitors;
- 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 concerning imetelstat proprietary rights;
- comments by securities analysts;

- large stockholders exiting their position in our common stock;
- announcements of or developments concerning potential future litigation;
- the issuance of common stock to partners, vendors or investors to raise additional capital or to acquire other oncology products, product candidates, programs or companies; and
- the occurrence of any other risks and uncertainties discussed 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, statements made on message boards and social media forums, legislative and regulatory measures and the activities of various interest groups or organizations. In addition to the 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 continue to meet the 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 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. In addition, we may be unable to meet other applicable NASDAQ listing requirements, including maintaining minimum levels of stockholders' equity or market values of our common stock, in which case our common stock could be delisted. 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.

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

As of December 31, 2017, we had 300,000,000 shares of common stock authorized for issuance and 159,877,239 shares of common stock outstanding. In addition, we had reserved 30,044,457 shares of our common stock for future issuance pursuant to our option and equity incentive plans and outstanding warrants as of December 31, 2017. In addition, under the universal shelf registration statement filed by us in August 2015 and declared effective by the SEC in September 2015, 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 $250 million.

Future sales of our common stock or the perception that such sales could occur, including pursuant to our 2015 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. 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, which could negatively affect the market price of our common stock and the return on your investment.

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 in the future, we issue preferred stock 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 company-wide severance plan, either of which could require a potential acquirer to pay a higher price. Either collectively or individually, these provisions may prevent holders of our common stock from benefiting from what they may believe are the positive aspects of acquisitions and takeovers, including the potential realization of a higher rate of return on their investment from these types of transactions.

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

We do not anticipate paying cash dividends on our common stock in the foreseeable future. Any payment of cash dividends will depend upon our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors.

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 annual 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 provide an opinion annually 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 material weaknesses or significant deficiencies will not exist or otherwise be discovered in the future. If material weaknesses or other significant deficiencies occur, such weaknesses or deficiencies could result in misstatements of our results of operations, restatements of our financial statements, a decline in our stock price, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

RISKS RELATED TO COMPETITIVE FACTORS

Competitors may develop technologies that are superior to or more cost-effective than ours, which may significantly impact the commercial viability of imetelstat, which could cause Janssen to terminate the Collaboration Agreement 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 related to imetelstat, the study of telomeres, telomerase, or 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. We expect Janssen's decisions regarding continued development and/or commercialization, if any, of imetelstat, including completing IMerge and/or IMbark, its Continuation Decision or the termination of the Collaboration Agreement, to be informed in part by what Janssen believes is the estimated commercial potential of imetelstat for the treatment of hematologic malignancies, such as MF or MDS.

Many companies are developing alternative therapies to treat hematologic myeloid malignancies. 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 cell counts; 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 for MF further along in development than imetelstat, such as pacritinib by CTI Biopharma Corporation, or CTI Biopharma, and fedratinib by Impact Biomedicines, Inc., acquired by Celgene Corporation, or Celgene, which have reported results from Phase 3 clinical trials. Other investigational treatments for MF include inhibitors of the JAK-STAT pathway, such as NS-018 by NS Pharma, Inc.; histone deacetylase inhibitors; interleukin-3 receptor targeted agents; inhibitors of heat shock protein 90; hypomethylating agents; PI3 Kinase and mTOR inhibitors; anti-fibrosis antibodies, such as PRM-151 from Promedior, Inc.; hedgehog and SMO inhibitors; PIM kinase inhibitors; IAP inhibitors; anti-LOX2 inhibitors; recombinant pentraxin 2 protein; KIP-1 activators; TGF-beta superfamily inhibitors, such as sotatercept and luspatercept by Acceleron Pharma, Inc., or Acceleron, in collaboration with Celgene; FLT inhibitors; and other tyrosine kinase inhibitors.

If approved for commercial sale for the treatment of lower risk MDS, imetelstat would compete against a number of treatment options, including erythropoiesis stimulating agents and other hematopoietic growth factors; immunomodulators, such as lenalidomide by Celgene; hypomethylating agents, such as azacitidine by Celgene and decitabine by Janssen; in addition to investigational treatments that may be further along in development than imetelstat, such as oral versions of azacitidine; histone deacetylase inhibitors; TGF-beta superfamily inhibitors, such as luspatercept by Acceleron, in collaboration with Celgene; PI3 Kinase inhibitors; aminopeptidase inhibitors, such as tosedostat by CTI Biopharma; TLR2-specific antibodies; anti-CD33 antibodies; anti-CD38 antibodies, such as daratumumab by Genmab A/S in collaboration with Janssen; anti-CD123 antibodies, such as talacotuzumab by Janssen; retinoic acid receptor alpha agonists, such as SY-1425 by Syros Pharmaceuticals; hypoxia-inducible factor prolyl hydroxylase inhibitors, such as roxadustat by FibroGen, Inc.; Fas ligand inhibitors; and JAK-STAT pathway inhibitors.

Independently, Janssen is developing therapies for hematologic malignancies, including AML, MDS, multiple myeloma and ABC-subtype diffuse large B-cell lymphoma. Molecular and cellular pathways of interest include:

- cell surface targets for immune-directed therapy;
- immune checkpoint inhibition;

- leukemia stem cells;
- pathway addiction (genetic alterations, cell-type specific pathways);
- conditional sensitivity (stress, protein-producing tumors);
- targeting of T-cells and natural killer "NK" cells to tumors;
- identification of novel tumor-specific antigens; and
- progression from early MDS to AML and cancer interception.

Success by Janssen in any of these approaches may compete with imetelstat or render imetelstat obsolete or noncompetitive, which could lead to a decision by Janssen to discontinue the imetelstat program and terminate the Collaboration Agreement, which would materially and adversely affect our business and business prospects and might cause us to cease operations.

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 imetelstat. These companies and institutions compete with us in recruiting and retaining qualified development and management personnel as well as in acquiring technologies complementary to the imetelstat program.

In addition to the above factors, imetelstat will face competition based on:

- product efficacy and safety;
- convenience of product administration;
- cost of manufacturing;
- the timing and scope of regulatory consents;
- status of coverage and level of reimbursement;
- price; and
- patent position, including potentially dominant patent positions of others.

As a result of the foregoing, competitors may develop more commercially desirable or affordable products than imetelstat, or achieve earlier patent protection or product commercialization than us or Janssen. 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 or superior to those that may be demonstrated by imetelstat. 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, competitors may price their products below what Janssen 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 competitors may render imetelstat obsolete, which may cause Janssen to terminate the Collaboration Agreement, which would severely and adversely affect our financial results, business and business prospects, and the future of imetelstat, and might cause us to cease 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:

- the clinical indications for which imetelstat is approved;
- the country and/or regions within which imetelstat is approved;
- the establishment and demonstration to the medical community of the clinical efficacy and safety of imetelstat;
- the ability to demonstrate that imetelstat is superior to alternatives on the market at the time;
- the ability to establish in the medical community the potential advantages of imetelstat over alternative treatment methods, including with respect to efficacy, safety, cost or route of administration;
- the label and promotional claims allowed by the FDA or other regulatory authorities for imetelstat, if any;
- the timing of market introduction of imetelstat as well as competitive products;
- the effectiveness of sales, marketing and distribution support for imetelstat;
- the availability of coverage, adequate reimbursement and pricing by government and third-party payors; and
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors, including governmental authorities.

The established use of conventional products competitive with imetelstat may limit or preclude the potential for imetelstat to receive market acceptance upon any commercialization. Janssen 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 the health care community does not accept imetelstat for any of the foregoing reasons, or for any other reason, our ability to earn potential milestone payments and royalties under the Collaboration Agreement with Janssen would be negatively impacted and our business and business prospects would be severely and adversely affected.

If acceptable prices or adequate reimbursement for imetelstat is not obtained, the use of imetelstat could be severely limited.

The ability to successfully commercialize imetelstat will depend significantly on obtaining acceptable prices and the availability of coverage and adequate reimbursement to the patient from third-party payors. Government payors, such as the Medicare and Medicaid programs, and other third-party payors, such as private health insurers and health maintenance organizations, determine which medications they will cover and establish reimbursement levels. Assuming Janssen obtains coverage for imetelstat by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. If approved for commercial sale, patients are unlikely to use imetelstat unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of imetelstat. Therefore, coverage and adequate reimbursement is critical to new product acceptance.

Government authorities and other third-party payors are developing increasingly sophisticated methods of controlling healthcare costs, such as by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined

discounts from list prices as a condition of coverage, are using restrictive formularies and preferred drug lists to leverage greater discounts in competitive classes, and are challenging the prices charged for medical products. Further, no uniform policy requirement for coverage and reimbursement for drug products exists among third-party payors in the United States. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require Janssen to provide scientific and clinical support for the use of imetelstat to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

We cannot be sure that coverage and reimbursement will be available for imetelstat, if approved for commercial sale, and, if reimbursement is available, what the level of reimbursement will be. There may also be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign regulatory authorities. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which marketing approval is obtained. If coverage and reimbursement are not available or reimbursement is available only to limited levels, Janssen may not successfully commercialize imetelstat, even if marketing approval is obtained.

The adoption of health policy changes and health care reform in the United States may adversely affect our business and financial results.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively known as the Affordable Care Act, or ACA, became law and substantially changed the way healthcare is funded by both governmental and private insurers, and significantly impacted the pharmaceutical industry. The ACA contains a number of provisions that may have a significant impact on our business.

While the Supreme Court upheld the constitutionality of most elements of the ACA in June 2012 and upheld the ACA against challenges to nationwide tax subsidies in July 2015, other judicial and Congressional challenges against the ACA have been brought, and are likely to be brought in the future. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed repeal legislation, the Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees. Congress may consider additional legislation to repeal or repeal other elements of the ACA. Therefore, we cannot assume that the ACA, as currently enacted or as amended in the future, or any legislation that may replace, or repeal other elements of the ACA, will not adversely affect our business and financial results and we cannot predict how future federal or state legislative or administrative changes relating to healthcare reform will affect our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, in August 2011, the Budget Control Act of 2011 was enacted, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction of at least $1.2 trillion for fiscal years 2012 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect beginning on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the Bipartisan Budget Act of 2018, will stay in effect through 2027 unless additional Congressional action is taken. Further, the American Taxpayer Relief Act of 2012, signed into law in January 2013, among other things, also reduced Medicare payments to certain providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

In the future, we anticipate additional proposals relating to the reform of the U.S. healthcare system, some of which could further limit the prices, or the amounts of reimbursement available for imetelstat. There has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices in light of the rising cost of prescription drugs and biologics. Specifically, there have been several recent U.S.

Congressional inquiries and proposed and enacted legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the price of drugs under Medicare, and reform government program reimbursement methodologies for drugs, some of which are included in the Trump administration's budget proposal for fiscal year 2019. At the federal level, Congress and the Trump Administration have each indicated that they will continue to seek new legislative and/or administrative measures to control drug costs. If future legislation were to impose direct governmental price controls and access restrictions, it could have a significant adverse impact on our business and financial results. Managed care organizations, as well as Medicaid and other government agencies, continue to seek price discounts. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biologic product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. Due to the volatility in the current economic and market dynamics, we are unable to predict the impact of any unforeseen or unknown legislative, regulatory, payor or policy actions, which may include cost containment and healthcare reform measures. Such policy actions could have a material adverse impact on the potential royalties under the Collaboration Agreement with Janssen on worldwide net sales of imetelstat, if approved.

Cost control initiatives also could decrease the price that Janssen may receive for imetelstat in the future. If imetelstat is not considered cost-effective or adequate third-party reimbursement for the users of imetelstat cannot be obtained, then Janssen may be unable to maintain price levels sufficient to realize an appropriate return on the investment in imetelstat, which would have a material adverse effect on our ability to earn potential milestone payments and royalties under the Collaboration Agreement, or could cause Janssen to terminate the Collaboration Agreement. Any of these events would severely and adversely affect our financial results, business and business prospects, and might cause us to cease operations.

If we fail to comply with federal and state healthcare laws, including fraud and abuse, transparency, and health information privacy and security laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors and customers, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any product of ours for which marketing approval is obtained. Such laws include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities, including prescription drug manufactures (or a party acting on its behalf), from knowingly and willfully, directly or indirectly, soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order, lease or recommendation of, any good, facility, item or service for which payment may be made under a federal healthcare program such as Medicare and Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the federal Anti-Kickback Statute has been violated. The ACA, among other things, amended the intent requirement of the federal Anti-Kickback Statute such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate, in order to commit a violation;
- the federal civil and criminal false claims and civil monetary penalties laws, including the civil False Claims Act and its *qui tam* or whistleblower provisions, which impose criminal and civil penalties against individuals or entities for, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. Entities can be held liable under these laws if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers, promoting a product off-label, or for providing medically unnecessary services or items. In addition, a claim including items

or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false or fraudulent statements in connection with the delivery of or payment for healthcare benefits, items or services;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, which imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security, transmission and breach reporting of individually identifiable health information, upon entities subject to the law, such as health plans, healthcare clearinghouses and healthcare providers and their respective business associates that perform services for them that involve individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;
- the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians, other healthcare providers, and healthcare entities, or marketing expenditures; and state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our current and future business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable healthcare laws, in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. If our operations are found to be in violation of any of these or any other health regulatory laws that may apply to us, we may be subject to significant penalties, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgement, individual imprisonment, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, reputational harm, diminished profits and future earnings, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Defending against any such actions can be costly, time-consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

In September 2017, we amended the lease agreement for our premises at 149 Commonwealth Drive, Menlo Park, California, to extend the lease term from February 2018 through January 2020. During the term of the amended lease, we will continue to occupy approximately 14,500 square feet of office space. Our amended lease at 149 Commonwealth Drive includes an option to extend the lease for one additional period of two years. We believe that our facilities are adequate to meet our requirements for the near term.

ITEM 3. LEGAL PROCEEDINGS

On March 14, 2014, the first of two substantially similar purported class action securities lawsuits was filed in the United States District Court for the Northern District of California, or the California District Court, naming as defendants us and certain of our officers. The second such lawsuit was filed on March 28, 2014. On June 6, 2014, a securities lawsuit, not styled as a class action, was filed in the United States District Court for the Southern District of Mississippi, or the Mississippi District Court, naming as defendants us and certain of our officers. This lawsuit was based on the same factual background as the class action securities lawsuits. These three cases, or the Class Action Lawsuits, were consolidated for all purposes into a single case.

On July 21, 2017, the California District Court entered an order and final judgment that dismissed with prejudice and released the claims asserted in the Class Action Lawsuits against all named defendants in connection with the Class Action Lawsuits, including us, and any claims that could have been asserted that arise or relate to the facts alleged in the Class Action Lawsuits, such that every member of the settlement class will be barred from asserting such claims in the future. In connection with the settlement of the Class Action Lawsuits, in April 2017, we paid $250,000 and our insurance providers paid $6.0 million to a settlement escrow account, to be paid to members of the settlement class, less payment of attorneys' fees and costs to plaintiff's counsel. The settlement does not constitute any admission of fault or wrongdoing by us or any of the individual defendants.

We do not expect to make any additional payments for and do not expect, and are not aware of, any additional claims arising from or related to the facts alleged in the Class Action Lawsuits and asserted by stockholders who have opted out of the settlement class in the Class Action Lawsuits. However, it is possible that additional lawsuits may be filed, or allegations may be made by stockholders, with respect to these same or other matters and also naming us and/or our officers and directors as defendants. Monitoring, initiating and defending against legal actions is time-consuming for our management, is likely to be expensive and may detract from our ability to fully focus our internal resources on our business activities. In addition, despite the availability of insurance, we may incur substantial legal fees and costs in connection with any additional litigation, and such amounts could be material to our financial statements. We may expend significant resources in the settlement or defense of any additional lawsuits, and we may not prevail in such lawsuits. We have not established any reserve for any potential liability relating to any additional lawsuits. Lawsuits could result in judgments against us that require us to pay damages, enjoin us from certain activities, or otherwise negatively 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 our stockholders' investment in our common stock.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Market Information

Our common stock is quoted on the Nasdaq Global Select Market under the symbol GERN. The high and low intraday sales prices as reported by the Nasdaq Global Select Market of our common stock for each of the quarters in the years ended December 31, 2017 and 2016 were as follows:

	High	Low
Year Ended December 31, 2017:		
First quarter	$ 2.45	$ 1.87
Second quarter	$ 3.15	$ 2.05
Third quarter	$ 3.01	$ 1.95
Fourth quarter	$ 2.36	$ 1.74
Year Ended December 31, 2016:		
First quarter	$ 4.77	$ 2.30
Second quarter	$ 3.35	$ 2.42
Third quarter	$ 3.13	$ 1.84
Fourth quarter	$ 2.45	$ 1.81

As of March 7, 2018, there were approximately 574 stockholders of record of our common stock. This number does not include "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions. We are engaged in a highly dynamic industry, which often results in significant volatility of our common stock price. On March 7, 2018, the closing sales price for our common stock was $2.68 per share.

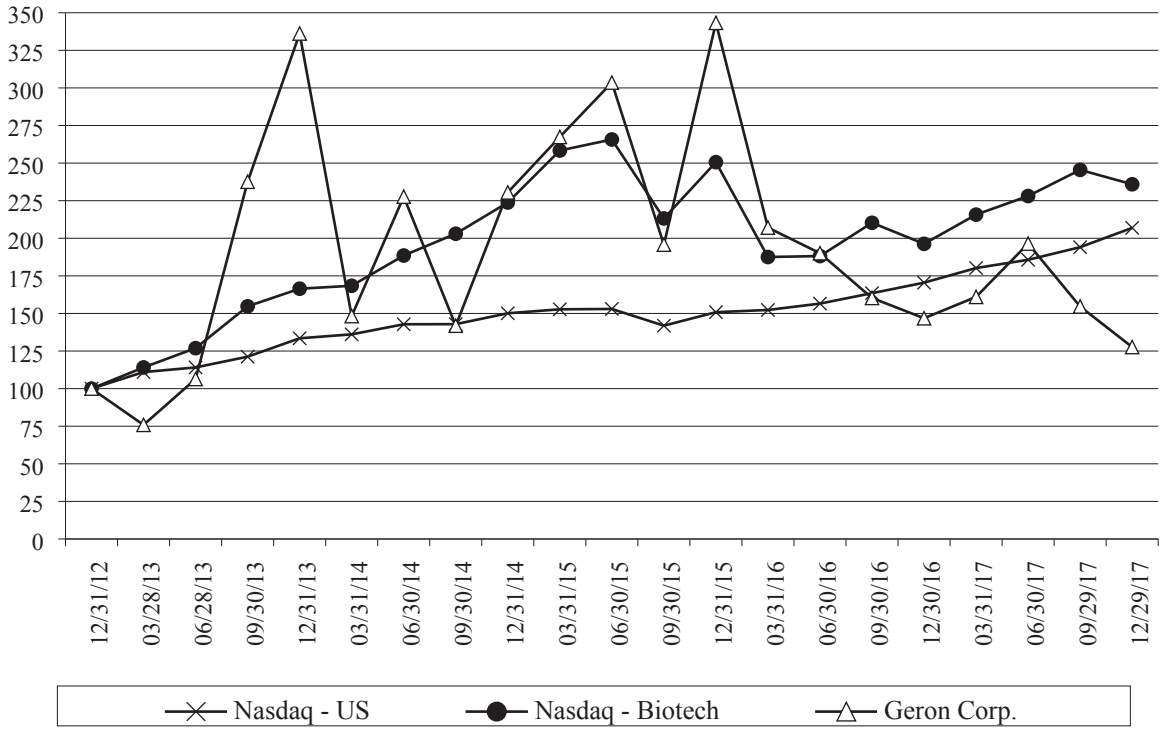
Dividend Policy

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

Performance Measurement Comparison[(1)]

The following graph compares total stockholder returns of Geron Corporation for the last five fiscal years beginning December 31, 2012 to two indices: the Nasdaq CRSP Total Return Index for the Nasdaq Stock Market-U.S. Companies, or the Nasdaq-US, and the Nasdaq Biotech Index, or the Nasdaq-Biotech. The total return for our stock and for each index assumes the reinvestment of dividends, although we have never declared cash dividends on Geron stock, and is based on the returns of the component companies weighted according to their capitalizations as of the end of each quarterly period. The Nasdaq-US tracks the aggregate price performance of equity securities of U.S. companies traded on the Nasdaq Global Select Market, or NGSM. The Nasdaq-Biotech, which is calculated and supplied by Nasdaq, represents biotechnology companies trading on Nasdaq under the Standard Industrial Classification (SIC) Code No. 283 Drugs main category (2833—Medicinals & Botanicals, 2834—Pharmaceutical Preparations, 2835—Diagnostic Substances, 2836—Biological Products). Geron common stock trades on the NGSM and is a component of both the Nasdaq-US and the Nasdaq-Biotech. The stockholder return shown in the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.

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



(1) This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of Geron Corporation under the Securities Act of 1933, as amended, or the Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

(2) Shows the cumulative total return on investment assuming an investment of $100 in each of Geron, the Nasdaq-US and the Nasdaq-Biotech on December 31, 2012. The cumulative total return on Geron stock has been computed based on a price of $1.41 per share, the price at which Geron common stock closed on December 31, 2012.

Recent Sales of Unregistered Securities

During the year ended December 31, 2017, there were no unregistered sales of equity securities by us.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data should be read together with our audited financial statements and accompanying notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" appearing elsewhere in this annual report on Form 10-K. The selected financial data in this section is not intended to replace our financial statements and the accompanying notes. Our historical results are not necessarily indicative of our future results.

	Year Ended December 31,				
	2017	2016	2015	2014	2013
	(In thousands, except share and per share data)				
Statements of Operations Data:					
Revenues:					
Collaboration revenue[1]	$ —	$ —	$ 35,000	$ —	$ —
License fees and royalties[2]	1,065	6,162	1,371	1,153	1,283
Total revenues	1,065	6,162	36,371	1,153	1,283
Operating expenses:					
Research and development	11,033	18,047	17,831	20,707	23,155
Restructuring charges[3]	—	—	1,306	—	1,462
General and administrative	19,287	18,761	17,793	16,758	15,624
Total operating expenses	30,320	36,808	36,930	37,465	40,241
Loss from operations	(29,255)	(30,646)	(559)	(36,312)	(38,958)
Unrealized gain (loss) on derivatives	—	—	16	351	(316)
Interest and other income	1,416	1,192	677	373	951
Interest and other expense	(77)	(83)	(88)	(82)	(56)
Net (loss) income	$ (27,916)	$ (29,537)	$ 46	$ (35,670)	$ (38,379)
Net (loss) income per share:					
Basic	$ (0.18)	$ (0.19)	$ 0.00	$ (0.23)	$ (0.30)
Diluted	$ (0.18)	$ (0.19)	$ 0.00	$ (0.23)	$ (0.30)
Shares used in computing net (loss) income per share:					
Basic	159,224,986	159,045,644	158,036,162	153,540,341	128,380,800
Diluted	159,224,986	159,045,644	162,663,894	153,540,341	128,380,800

(1) In November 2014, we entered into a collaboration and license agreement, or the Collaboration Agreement, pursuant to which we granted to Janssen Biotech Inc., or Janssen, the exclusive rights to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective in December 2014 and we received $35 million from Janssen as an upfront payment, which was classified as deferred revenue on our balance sheet as of December 31, 2014. Upon delivery of the imetelstat license rights and completion of our performance of the technology transfer-related activities to Janssen as outlined under the Collaboration Agreement, we fully recognized the $35 million upfront payment as collaboration revenue in the third quarter of 2015.

(2) In September 2016, we entered into a license agreement, or License Agreement, with Janssen Pharmaceuticals, Inc., or Janssen Pharmaceuticals, pursuant to which we granted to Janssen Pharmaceuticals an exclusive worldwide license under our proprietary patents for the research, development and commercialization of products based on specialized oligonucleotide backbone chemistry and novel amidates for ribonucleic acid interference, or RNAi, for the prevention, treatment and/or diagnosis of any and all human disorders, excluding cancers originating from the blood or bone marrow, and products whose predominant or primary mechanism of action is telomerase inhibition. In accordance with the terms of the License Agreement, we received $5 million from Janssen Pharmaceuticals as an upfront payment, which we recognized as license fee revenue in the third quarter of 2016 upon our delivery of the license rights and transfer of know-how to Janssen Pharmaceuticals under the License Agreement.

(3) In March 2015, we implemented an organizational resizing which resulted in aggregate restructuring charges of approximately $1.3 million in 2015. All actions associated with this restructuring were completed in 2015. See Note 6 on Restructuring in Notes to Financial Statements of this annual report on Form 10-K.

In April 2013, we discontinued our discovery research programs and companion diagnostics program based on telomere length and closed our research laboratory facility located at 200 Constitution Drive, Menlo Park, California. In connection with this restructuring, we incurred aggregate restructuring charges of approximately $1.4 million in 2013. All actions associated with this restructuring were completed in 2013.

	December 31,				
(In thousands)	2017	2016	2015	2014	2013
Balance Sheets Data:					
Cash, restricted cash, cash equivalents and marketable securities	$ 109,195	$ 129,067	$ 146,700	$ 170,639	$ 66,019
Working capital	89,454	108,243	109,258	111,607	59,470
Total assets	110,313	130,249	148,760	172,511	67,344
Accumulated deficit	(985,840)	(957,924)	(928,387)	(928,433)	(892,763)
Total stockholders' equity	103,797	122,380	142,126	130,712	59,757

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

The following discussion should be read in conjunction with the section entitled "Business" in Part I, Item 1 and the audited financial statements and notes thereto included in Part II, Item 8 of this annual report on Form 10-K. The information provided should be reviewed in the context of the sections entitled "Risks Related to Our Collaboration with Janssen" and "Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat" in Part I, Item 1A entitled "Risk Factors" and elsewhere in this annual report on Form 10-K.

Business Overview

We are a biopharmaceutical company that currently supports the clinical stage development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies, by Janssen Biotech, Inc., or Janssen. Early clinical data in essential thrombocythemia, or ET, myelofibrosis, or MF, and myelodysplastic syndromes, or MDS, suggest imetelstat may have disease-modifying activity by inhibiting the progenitor cells of the malignant clones for the underlying diseases.

On November 13, 2014, we entered into a collaboration and license agreement, or the Collaboration Agreement, pursuant to which we granted Janssen the exclusive rights to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014, and we received $35 million from Janssen as an upfront payment. Additional consideration under the Collaboration Agreement includes potential payments of up to an aggregate maximum total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales of imetelstat. The Collaboration Agreement also provides for a joint governance structure that includes a Joint Steering Committee, or JSC, with equal membership from both companies. See "Licensing—Collaboration and License Agreement with Janssen" under Item 1, "Business" for more information about the Collaboration Agreement, including economic terms and termination provisions of the Collaboration Agreement. The information provided should be reviewed in the context of the sections entitled "Risks Related to Our Collaboration with Janssen" and "Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat" under Item 1A, "Risk Factors".

Under the Collaboration Agreement, Janssen is wholly responsible for developing, manufacturing, seeking regulatory approval for, and commercialization of, imetelstat worldwide. Janssen is currently conducting two clinical trials of imetelstat: IMbark, a Phase 2 trial in MF, in which the first patient was dosed in September 2015 and the last patient was enrolled in October 2016; and IMerge, a Phase 2/3 trial in MDS, in which the first patient

was dosed in January 2016. We contribute 50% of the development costs for these trials, which Janssen is solely conducting.

For IMbark, Janssen completed internal data reviews in September 2016, April 2017 and March 2018. In these data reviews, activity within multiple outcome measures was observed with imetelstat treatment that suggest potential clinical benefit in patients with MF who are relapsed after or refractory to prior treatment with a janus kinase, or JAK, inhibitor. However, new patient enrollment in IMbark was suspended in October 2016 because an insufficient number of patients met the protocol defined interim efficacy criteria to continue enrollment. In March 2018, Janssen will officially close the trial to new patient enrollment. The JSC expects that the over 100 patients enrolled in IMbark to date will be adequate to assess overall survival. Patients who remain in the treatment phase of IMbark may continue to receive imetelstat, and until the protocol-specified primary analysis, all safety and efficacy assessments are being conducted as planned in the protocol, including following patients, to the extent possible, until death, to enable an assessment of overall survival. In March 2018, based on the rate of deaths occurring in the trial, the JSC determined that the protocol-specified primary analysis of IMbark, which includes an assessment of overall survival, will begin by the end of the second quarter of 2018. Upon the protocol-specified primary analysis, the main trial will be completed. The IMbark protocol is being amended to establish an extension phase of the trial to enable patients remaining in the treatment phase to continue to receive imetelstat treatment, per investigator discretion. Following completion of the primary analysis, Janssen must notify us of its decision, or the Continuation Decision, whether to: (i) maintain the license rights granted under the Collaboration Agreement and continue the development of imetelstat or (ii) discontinue the development of imetelstat and terminate the Collaboration Agreement. We expect Janssen to inform us of its decision by the end of the third quarter of 2018.

For IMerge, Janssen completed internal data reviews in September 2016 and April 2017. In addition, preliminary data from Part 1 of IMerge were presented at the American Society of Hematology Annual Meeting, or ASH, in December 2017. These data showed that among the 32 red blood cell transfusion-dependent MDS patients enrolled in Part 1of the trial, a subset of 13 patients who had not received prior treatment with either a hypomethylating agent or lenalidomide and did not have a deletion 5q chromosomal abnormality, or non-del(5q), exhibited an increased rate and durability of transfusion independence compared to the overall trial population. Based on the preliminary data from this 13-patient subset, Janssen has expanded new patient enrollment in Part 1 of IMerge to enroll approximately 20 additional patients to increase the experience and confirm the benefit-risk profile of imetelstat in this refined target patient population. In November 2017, the first patient was dosed in the expanded Part 1 and enrollment was completed in February 2018. Using the preliminary data from Part 1, Janssen sponsored an application to the United States Food and Drug Administration, or the FDA, for Fast Track designation for the potential treatment of adult patients with transfusion-dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an erythropoiesis stimulating agent. The FDA granted Fast Track designation to imetelstat in October 2017.

Financial Overview

We had approximately $109.2 million in cash and investments as of December 31, 2017. To grow and diversify our business, we plan to continue our business development efforts to identify, and seek to acquire and/or in-license other oncology products, product candidates, programs or companies. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness or seek equity capital, or both. While we reported a small profit for the year ended December 31, 2015 due to our recognition of revenue in connection with the upfront payment from Janssen under the Collaboration Agreement, until 2015 we had never been profitable. We have incurred significant net losses since our inception in 1990, resulting principally from costs incurred in connection with our research and development activities and from general and administrative costs associated with our operations. As of December 31, 2017, we had an accumulated deficit of $985.8 million. Since our inception, we primarily have financed our operations through the sale of equity securities, interest income on our marketable securities and payments we received under our collaborative and licensing arrangements.

Substantially all of our revenues to date have been payments under collaborative agreements, and milestones, royalties and other revenues from our licensing arrangements. We currently have no source of product revenue. The significance of future losses, future revenues and any potential future profitability will depend primarily on whether Janssen continues to develop and advance imetelstat and the clinical and commercial success of imetelstat, which

would result in potential future revenues to us in the form of milestone payments and royalties under the Collaboration Agreement, and whether we in-license or acquire other oncology products, product candidates, programs or companies in order to grow and diversify our business. There can be no assurance that we will receive any milestone payments or royalties from Janssen in the future, or at all. In addition, if Janssen does not perform in the manner we expect or fulfill its responsibilities in a timely manner, or at all, including with respect to obtaining sufficient efficacy and safety data from the additional patients enrolled in Part 1 of IMerge and/or obtaining longer-term efficacy and safety data from IMbark to enable an assessment of overall survival, the clinical development, manufacturing, regulatory approval and/or commercialization of imetelstat could be delayed or terminated, and it could become necessary for us to assume responsibility for the clinical development, manufacturing, regulatory approval and/or commercialization of imetelstat at our own expense. 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.

Critical Accounting Policies and Estimates

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

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

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

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

Fair Value of Financial Instruments

We categorize financial instruments recorded at fair value on our balance sheets based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

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

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

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

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

Financial instruments classified as Level 1 include money market funds and certificates of deposit, representing approximately 10% of our total financial instruments classified as assets measured at fair value as of December 31, 2017. Financial instruments classified as Level 2 include U.S. government-sponsored enterprise securities, commercial paper and corporate notes, representing approximately 90% of our total financial instruments classified as assets measured at fair value as of December 31, 2017. The price for each security at the measurement date is derived from various sources. Periodically, we assess the reasonableness of these sourced prices by comparing them to the prices provided by our portfolio managers from broker quotes as well as reviewing the pricing methodologies used by our portfolio managers. Historically, we have not experienced significant deviation between the sourced prices and our portfolio managers' prices.

For a further discussion regarding fair value measurements, see Note 2 on Fair Value Measurements in Notes to Financial Statements of this annual report on Form 10-K.

Revenue Recognition

We recognize revenue for each unit of accounting when all of the following criteria have been met: (a) persuasive evidence of an arrangement exists, (b) delivery has occurred or services have been rendered, (c) the seller's price to the buyer is fixed or determinable, and (d) collectability is reasonably assured. Amounts received prior to satisfying these revenue recognition criteria are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current deferred revenue. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as noncurrent deferred revenue.

Since our inception, substantially all of our revenues have been generated from license and collaboration agreements. Economic terms in these agreements may include non-refundable upfront license payments in cash or equity securities, option payments in cash or equity securities, cost reimbursements, cost-sharing arrangements, milestone payments, royalties on future sales of products, or any combination of these items. In applying the appropriate revenue recognition guidance related to these agreements, we first assess whether the arrangement contains multiple elements. In this evaluation, we consider: (i) the deliverables included in the arrangement and (ii) whether the individual deliverables represent separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation involves subjective determinations and requires us to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a standalone basis, and (ii) if the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. In assessing whether an item has standalone value, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner or licensee and the availability of the associated expertise in the general marketplace. In addition, we consider whether the collaboration partner or licensee can use the other deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. We then apply the applicable revenue recognition criteria noted above to each of the separate units of accounting in determining the appropriate period and pattern of recognition. We determine how to allocate arrangement consideration to identified units of accounting based on the selling price hierarchy provided under relevant accounting guidance. The estimated fair value of deliverables under the arrangement may be derived using a best estimate of selling price if vendor-specific-objective evidence and third-party evidence are not available.

Upfront non-refundable signing, license or non-exclusive option fees are recognized as revenue: (i) when rights to use the intellectual property have been delivered, if the license has standalone value from the other deliverables to be provided under the agreement, or (ii) over the term of the agreement if we have continuing performance obligations, as the arrangement would be accounted for as a single unit of accounting. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

At the inception of an arrangement that includes milestone payments, we assess whether each milestone is substantive and at risk on the basis of the contingent nature of the milestone. This evaluation includes an assessment of whether: (i) the consideration is commensurate with either (1) our performance to achieve the milestone or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from our performance to achieve the milestone, (ii) the consideration relates solely to past performance and (iii) the consideration is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement. We consider various factors, such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone, in making this assessment. There is considerable judgment involved in determining whether a milestone satisfies all of the criteria required to conclude that a milestone is substantive. Milestone payments for milestones that are considered substantive would be recognized as revenue in their entirety upon successful accomplishment of the milestone, assuming all other revenue recognition criteria are met. Milestone payments for milestones that are not considered substantive would be recognized as revenue over the remaining period of performance, assuming all other revenue recognition criteria are met.

Our license and collaboration agreements with certain partners also provide for contingent payments to us based solely upon the performance of the respective partner. For such contingent amounts, we recognize the payments as revenue when earned under the applicable contract, which is generally upon completion of performance by the respective partner, provided that collection is reasonably assured.

Royalties are recognized as earned in accordance with contract terms when royalties from licensees can be reasonably estimated and collection is reasonably assured. If royalties cannot be reasonably estimated or collection of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received. Revenue from commercial milestone payments is accounted for as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met and we have no performance obligations related to the milestone.

Cost-sharing expenses are recorded as earned or owed based on the performance requirements by both parties under the respective contracts. For arrangements in which we and our collaboration partner in the agreement are exposed to significant risks and rewards depending on the commercial success of the activity, we recognize payments between the parties on a net basis and record such amounts as a reduction or addition to research and development expense. For arrangements in which we have agreed to perform certain research and development services for our collaboration partner and are not exposed to significant risks and rewards that depend on the commercial success of the activity, we recognize the respective cost reimbursements as revenue under the collaborative agreement as the related research and development services are rendered.

Revenue recognition for licenses and collaboration agreements requires significant judgment. We evaluate the deliverables under an arrangement and estimate the fair value of those deliverables. We also assess the substantive nature of milestones. Our assessments and estimates are based on contractual terms, historical experience and general industry practice. Revisions in these values or estimations have the effect of increasing or decreasing license fee or collaboration revenue in the period of revision. As of December 31, 2017, we have not made any revisions to revenue recognition estimates.

Clinical Trial Accruals

For the clinical development activities being conducted by Janssen under the Collaboration Agreement, we monitor patient enrollment levels and related activities to the extent possible through discussions with Janssen personnel and base our estimates on the best information available at the time. However, additional information may become available to us which would allow us to make a more accurate estimate in future periods. In this event, we

may be required to record adjustments to research and development expenses in future periods when the actual level of activity becomes more certain.

Valuation of Stock-Based Compensation

We measure and recognize compensation expense for all share-based payment awards to our employees and directors, including stock options, restricted stock awards and employee stock purchases related to our Employee Stock Purchase Plan, or ESPP, based on estimated grant-date fair values for these instruments. The grant-date fair value of share-based payment awards is amortized over the vesting period of the awards using a straight-line method and reduced for estimated forfeitures. We use the Black Scholes option-pricing model to estimate the grant-date fair value of our stock options and employee stock purchases. The grant-date fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant.

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

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

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of: (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete.

Results of Operations

Our results of operations have fluctuated from period to period and may continue to fluctuate in the future, based primarily upon the progress of research and development efforts in collaboration with Janssen and whether we are able to acquire and/or in-license other oncology products, product candidates, programs or companies in order to grow and diversify our business. Results of operations for any period may be unrelated to results of operations for any other period. Thus, historical results should not be viewed as indicative of future operating results. For example, in 2015 we reported net income for the first time due to recognition of revenue in connection with the upfront payment from Janssen under the Collaboration Agreement. However, we expect to incur operating losses in the future as clinical development activities for imetelstat continue under our Collaboration Agreement with Janssen, and our operating losses may increase in size. We are subject to risks common to companies in our industry and at our stage of development, including, but not limited to, risks inherent in research and development efforts, our dependence on Janssen for the development, manufacture, regulatory approval for and commercialization of, imetelstat, uncertainty of preclinical and clinical trial results or regulatory approvals or clearances, the future development of imetelstat, including any future efficacy or safety results that may cause the benefit-risk profile of imetelstat to become unacceptable, the possibility that Janssen could discontinue the imetelstat program and terminate the Collaboration Agreement at any time and for any reason, irrespective of whether there is data from IMbark suggesting an adequate improvement in survival in relapsed or refractory MF, with the determination of adequacy to be assessed by Janssen in its sole discretion, or whether there is data from IMerge to support the benefit-risk profile of imetelstat in lower risk MDS; our need for future capital, enforcement of our patent and proprietary rights, reliance upon our collaborators, licensees, investigators and other third parties, and potential competition. In order for imetelstat to be commercialized, we are wholly dependent on Janssen to conduct

preclinical tests and clinical trials to demonstrate the safety and efficacy of imetelstat, 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 royalties based on sales of imetelstat for many years, if at all.

Revenues

Collaboration Revenue

Upon the effectiveness of the Collaboration Agreement with Janssen in December 2014, we received $35 million as an upfront payment, which we classified as deferred revenue upon receipt. We determined delivery of the imetelstat license rights granted by us to Janssen, together with our performance of the technology transfer-related activities outlined in the Collaboration Agreement, represented the sole non-contingent deliverable associated with the upfront payment. Therefore, we accounted for our delivery of the imetelstat license rights and our performance of the technology transfer-related activities as a single unit of accounting. During the third quarter of 2015, we completed performance of the technology transfer-related activities to Janssen as outlined under the Collaboration Agreement. Combining this performance with the delivery of the imetelstat license rights, we fully recognized the $35 million upfront payment from Janssen as collaboration revenue on our statements of operations during the third quarter of 2015. No further payments have been made by Janssen to us under the Collaboration Agreement. Any future collaboration revenue is substantially dependent on Janssen's ability to successfully develop and commercialize imetelstat in accordance with the Collaboration Agreement. See further discussion of revenue recognition for the Collaboration Agreement in Note 4 on License Agreements in Notes to Financial Statements of this annual report on Form 10-K.

License Fees and Royalties

In addition to the Collaboration Agreement with Janssen for imetelstat, we have entered into several license or collaboration agreements with companies involved with oncology, diagnostics, research tools and biologics production, whereby we have granted certain rights to our non-imetelstat related technologies. In connection with these agreements, we are eligible to receive license fees, option fees, milestone payments and royalties on future sales of products, or any combination thereof. We recognized license fee revenues of $667,000, $5.6 million and $722,000 in 2017, 2016 and 2015, respectively, related to our various agreements. The decrease in license fee revenues in 2017 compared to 2016 and the increase in license fee revenues in 2016 compared to 2015 primarily reflects the full recognition of an upfront payment of $5 million from Janssen Pharmaceuticals, Inc., or Janssen Pharmaceuticals, under a license agreement that was executed in September 2016, or the License Agreement, related to license rights to commercialize products based on specialized oligonucleotide backbone chemistry and novel amidates for RNAi for the prevention, treatment and/or diagnosis of any and all human disorders, excluding cancers originating from the blood or bone marrow, and products whose predominant or primary mechanism of action is telomerase inhibition. See further discussion of revenue recognition under and description of the terms of the License Agreement in Note 4 on License Agreements in Notes to Financial Statements of this annual report on Form 10 K.

We determined delivery of the license rights granted by us to Janssen Pharmaceuticals under the License Agreement, together with the transfer of certain know-how necessary for the research, development and commercialization of products under the License Agreement, represented the sole non-contingent deliverable under the License Agreement. Accordingly, we accounted for our delivery of the license rights and transfer of know-how under the License Agreement as a single unit of accounting. Since we completed the delivery of the license rights and transfer of know-how to Janssen Pharmaceuticals under the License Agreement during the third quarter of 2016, we fully recognized the upfront payment from Janssen Pharmaceuticals as license fee revenue on our statements of operations in the third quarter of 2016. Since the research and development of the technology we licensed to Janssen Pharmaceuticals under the License Agreement is at a very early stage, we do not expect significant milestone payments under the License Agreement unless and until a product that utilizes or incorporates the licensed technology enters clinical development and receives marketing approval, which may take many years, if ever. As such, future revenues under the License Agreement involve a substantial degree of uncertainty and risk that they may never be realized.

We recognized royalty revenues of $398,000, $537,000 and $649,000 in 2017, 2016 and 2015, respectively, on product sales of telomerase detection and telomere measurement kits to the research-use-only market, cell-based research products and nutritional products. The decrease in royalty revenues in 2017 compared to 2016 and 2016 compared to 2015 primarily reflects lower product sales by our licensees.

In 2017, the majority of our revenues were from license fees and royalties under licenses granted to several biotechnology and pharmaceutical companies to use telomerase immortalized cells in drug discovery research and for drug discovery applications. Two customers accounted for approximately 39% of our 2017 revenues. The upfront payment from Janssen Pharmaceuticals represented approximately 81% of our 2016 revenues. The upfront payment from Janssen represented approximately 96% of our 2015 revenues.

Future license fee and royalty revenues are dependent on additional agreements being signed, if any, current agreements being maintained and the underlying patent rights for the licenses remaining active. We expect revenues under our license agreements related to our human telomerase reverse transcriptase technology to decline significantly in the coming years, and to be eliminated by the end of 2019, due to upcoming patent expirations on such technology. Current revenues may not be predictive of future revenues.

Research and Development Expenses

During the years ended December 31, 2017, 2016 and 2015, imetelstat was the sole research and development program we supported. For the imetelstat research and development program, we incur direct external, personnel related and other research and development costs. For the years ended December 31, 2017, 2016 and 2015, direct external expenses primarily consisted of our proportionate share of research and development costs incurred by Janssen under the Collaboration Agreement. Personnel related expenses primarily consist of salaries and wages, stock-based compensation, payroll taxes and benefits for Geron employees involved with ongoing research and development efforts. Other research and development expenses primarily consist of research related overhead associated with allocated expenses for rent and maintenance of facilities and other supplies.

Research and development expenses were $11.0 million, $18.0 million and $17.8 million for the years ended December 31, 2017, 2016 and 2015, respectively. The decrease in research and development expenses in 2017 compared to 2016 primarily reflects lower direct external costs for our proportionate share of clinical development expenses under the collaboration with Janssen and reduced personnel related expenses. The increase in research and development expenses in 2016 compared to 2015 primarily reflects the net result of higher direct external costs for our proportionate share of clinical development expenses under the collaboration with Janssen, partially offset by reduced personnel related expenses and research related overhead as a result of the March 2015 restructuring and lower direct external expenses for the manufacturing of imetelstat drug product.

Research and development expenses for the years ended December 31, 2017, 2016 and 2015 were as follows:

	Year Ended December 31,		
(In thousands)	**2017**	**2016**	**2015**
Direct external research and development expenses:			
Clinical program: Imetelstat	$ 8,437	$ 14,695	$ 9,574
Personnel related expenses	2,063	2,729	6,478
All other research and development expenses	533	623	1,779
Total	$ 11,033	$ 18,047	$ 17,831

At this time, we cannot provide reliable estimates of how much time or investment will be necessary to commercialize imetelstat. For a more complete discussion of the risks and uncertainties associated with the development of imetelstat in collaboration with Janssen, see the sub-sections entitled “Risks Related to Our Collaboration with Janssen” and “Risks Related to Clinical Development, Regulatory Approval and Commercialization of Imetelstat” in Part I, Item 1A entitled “Risk Factors” and elsewhere in this annual report on Form 10-K.

Restructuring Charges

In March 2015, in connection with projected reduced operational demands as a result of the Collaboration Agreement with Janssen, we implemented an organizational resizing which resulted in aggregate restructuring charges of approximately $1.3 million in 2015 related to one-time termination benefits, including $307,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period for certain stock options previously granted to employees affected by the restructuring. All actions associated with this restructuring were completed in 2015. See Note 6 on Restructuring in Notes to Financial Statements of this annual report on Form 10-K for further discussion of the restructuring charges.

General and Administrative Expenses

General and administrative expenses were $19.3 million, $18.8 million and $17.8 million for the years ended December 31, 2017, 2016 and 2015, respectively. The increase in general and administrative expenses in 2017 compared to 2016 primarily reflects higher non-cash stock-based compensation expense, an increased allocation of facilities and other overhead costs to general and administrative activities and higher consulting costs, partially offset by lower legal costs. The increase in general and administrative expenses in 2016 compared to 2015 primarily reflects the net result of higher non-cash stock-based compensation expense and an increased allocation of facilities and other overhead costs to general and administrative activities, partially offset by lower consulting and legal costs. We expect general and administrative expenses in 2018 to remain consistent with 2017.

Unrealized Gain on Derivatives

Non-employee options classified as derivative liabilities are marked to fair value at each financial reporting date with any resulting changes in fair value being recorded as unrealized gain (loss) in the statements of operations. We incurred an unrealized gain on derivatives of $16,000 for the year ended December 31, 2015, which reflected a decline in the fair value of non-employee options classified as derivative liabilities. No comparable amounts were incurred in 2017 and 2016 as all non-employee options classified as derivative liabilities expired unexercised during the first quarter of 2015.

Interest and Other Income

Interest income was $1.4 million, $1.2 million and $677,000 for the years ended December 31, 2017, 2016 and 2015, respectively. The increase in interest income in 2017 compared to 2016 and 2016 compared to 2015 primarily reflects higher yields on our marketable securities portfolio. Interest earned in future periods will depend on the size of our marketable securities portfolio and prevailing interest rates.

Other income of $16,000 for the year ended December 31, 2016 reflects gains on sales of excess equipment. No other income was recognized for the years ended December 31, 2017 and 2015.

Interest and Other Expense

Interest and other expense was $77,000, $83,000 and $88,000 for the years ended December 31, 2017, 2016 and 2015, respectively. Interest and other expense primarily reflects bank charges related to our cash operating accounts and marketable securities portfolio.

Liquidity and Capital Resources

As of December 31, 2017, we had cash, restricted cash, cash equivalents and marketable securities of $109.2 million, compared to $129.1 million at December 31, 2016 and $146.7 million at December 31, 2015. The decrease in cash, restricted cash, cash equivalents and marketable securities in 2017 and 2016 was the result of cash being used for operations. We expect to experience negative cash flow and to incur significant and increasing operating expenses for the foreseeable future as the development of imetelstat continues in collaboration with Janssen. We estimate that our existing capital resources and future interest income will be sufficient to fund our current level of operations through at least the next 12 months. However, we may use our available capital resources sooner than we anticipate. For example, in order to grow and diversify our business, we plan to continue our

business development efforts to identify and seek to acquire and/or in-license other oncology products, product candidates, programs or companies. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness, seek equity capital or both. In addition, there can be no assurance that sufficient additional capital would be available to us in order to pursue any of these opportunities.

We have an investment policy to invest our cash in liquid, investment grade securities, such as interest-bearing money market funds, certificates of deposit, municipal securities, U.S. government and agency securities, corporate notes and commercial paper. Our investment portfolio does not contain securities with exposure to sub-prime mortgages, collateralized debt obligations, asset-backed securities or auction rate securities and, to date, we have not recognized any other-than-temporary impairment charges on our marketable securities or any significant changes in aggregate fair value that would impact our cash resources or liquidity. To date, we have not experienced lack of access to our invested cash and cash equivalents; however, access to our invested cash and cash equivalents may be impacted by adverse conditions in the financial and credit markets.

In August 2015, we entered into an At Market Issuance Sales Agreement, or 2015 Sales Agreement, with MLV & Co. LLC, or MLV, which provides that, upon the terms and subject to the conditions and limitations set forth in the 2015 Sales Agreement, we may elect to issue and sell shares of our common stock having an aggregate offering price of up to $50 million from time to time through MLV as our sales agent. We are not obligated to make any sales of common stock under the 2015 Sales Agreement. Prior to 2017, no shares of our common stock were sold under the 2015 Sales Agreement. In December 2017 and January 2018, 614,230 and 776,788 shares, respectively, of our common stock were sold under the 2015 Sales Agreement for aggregate net cash proceeds of approximately $2.6 million, after deducting sales commissions and offering expenses payable by us. As of March 16, 2018, approximately $47.2 million of our common stock remained available for issuance under the 2015 Sales Agreement. The 2015 Sales Agreement will expire in August 2018 unless extended by the parties.

We may need additional capital resources in order to support development and commercialization of imetelstat, especially if we elect to exercise certain options under the Collaboration Agreement and potentially independently pursue imetelstat development under our own independent development plan, or IDP, under the Collaboration Agreement, and to otherwise support the future growth of our business through the potential acquisition and/or in-licensing of other oncology products, product candidates, programs or companies. We cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement with Janssen, and potential future sales of our common stock, including pursuant to our 2015 Sales Agreement with MLV, will be sufficient to fund future planned activities. 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;
- whether Janssen discontinues development of imetelstat and/or terminates the Collaboration Agreement, and we choose to develop imetelstat ourselves;
- further changes or delays in Janssen's development plans for imetelstat, including changes to or further expansion of or delays in ongoing clinical trials decided upon by Janssen or required by regulatory authorities, such as clinical holds or other requirements, or any other factors;
- the achievement of development, regulatory and sales milestones resulting in payments to us from Janssen under the Collaboration Agreement and the timing of receipt of such payments, if any;
- to the extent permitted under the Collaboration Agreement, whether we independently pursue imetelstat development under our own IDP;
- our potential reimbursement obligations to Janssen if any data from a Janssen IDP support approval by regulatory authorities in the United States or other countries;
- in the event that Janssen provides an affirmative Continuation Decision to us, whether we then elect our option, or the U.S. Opt-In Rights, to share further U.S. development and promotion costs for imetelstat beyond IMbark or IMerge under the Collaboration Agreement, including our share of development costs incurred to date by Janssen that we will be required to reimburse if we exercise our U.S. Opt-In Rights;

- Janssen's ability to meaningfully reduce manufacturing costs of imetelstat;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization of imetelstat, including the number of indications being pursued, subject to clearances and approvals by the FDA and other regulatory authorities;
- the time and costs involved in obtaining regulatory clearances and approvals in the United States and in other countries;
- Janssen's ability to successfully market and sell imetelstat, upon regulatory approval or clearance, in the United States and other countries;
- if we exercise our U.S. Opt-In Rights, our decision to also exercise our co-promotion option under the Collaboration Agreement with Janssen, or the U.S. Co-Promotion Option, including the costs and timing of building a U.S. sales force;
- the sales price for imetelstat;
- the availability of coverage and adequate third-party reimbursement for imetelstat;
- the timing, receipt and amount of royalties under the Collaboration Agreement on worldwide net sales of imetelstat, upon regulatory approval or clearance, if any;
- the cost of acquiring and/or in-licensing other oncology products, product candidates, programs or companies, if any;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization of any acquired or in-licensed oncology products, product candidates, programs, or companies, including the number of indications being pursued, subject to clearances and approvals by the FDA and other regulatory authorities;
- expenses associated with potential future litigation; 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. If our existing capital resources, future interest income, and potential milestone payments and royalties under the Collaboration Agreement with Janssen are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations, including pursuant to our 2015 Sales Agreement with MLV. Further, if the Collaboration Agreement is terminated, including as a result of Janssen's failure to provide an affirmative Continuation Decision to us, or for any other reason, we would not receive any milestone payments or royalties under the Collaboration Agreement, and then, depending on the timing of such event, we would be required to fund all clinical development, manufacturing and commercial activities for imetelstat should we elect to continue the development of imetelstat ourselves, which would require us to raise substantial additional capital or establish alternative collaborations with third-party collaboration partners, which may not be possible. If the Collaboration Agreement is terminated and we are unable to raise additional capital or establish alternative collaborations with third-party collaboration partners for imetelstat, the development of imetelstat would be discontinued, which might cause us to cease operations. Additional financing through public or private equity financings, including pursuant to our 2015 Sales Agreement with MLV, 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. In this regard, continued volatility and instability in the global financial markets and political climate could adversely affect our ability to raise additional funds through financings and the terms upon which we may raise those funds.

Our ability to raise additional funds will be severely impaired in the event of:

- further changes or delays in Janssen's development plans for imetelstat;
- a failure or inability to show adequate safety or efficacy of imetelstat in current or potential future clinical trials, which may result in a decision by Janssen to delay or discontinue further development of imetelstat; or
- a termination of the Collaboration Agreement or if our collaboration with Janssen is otherwise unsuccessful.

If sufficient capital is not available, we may be unable to fulfill our funding obligations under the Collaboration Agreement with Janssen, resulting in our breach of the Collaboration Agreement, which could lead to Janssen paying lower milestone payments and lower royalties to us under a reduced royalty tier. This would have a material adverse effect on our results of operations and financial condition.

Moreover, in order to grow and diversify our business, we plan to continue our business development efforts to identify and seek to acquire and/or in-license other oncology products, product candidates, programs or companies. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness, seek equity capital or both, including pursuant to our 2015 Sales Agreement with MLV. In addition, there can be no assurance that sufficient additional capital would be available to us in order to pursue any of these opportunities.

Cash Flows from Operating Activities

Net cash used in operations was $20.6 million, $18.4 million and $24.2 million in 2017, 2016 and 2015, respectively. The increase in net cash used in operations in 2017 compared to 2016 primarily reflects the net result of the receipt of the $5 million upfront payment from Janssen Pharmaceuticals under the License Agreement in 2016, partially offset by lower payments to Janssen in 2017 under the cost-sharing arrangement for imetelstat clinical development. The decrease in net cash used in operations in 2016 compared to 2015 primarily reflects the net result of the receipt of the $5 million upfront payment from Janssen Pharmaceuticals under the License Agreement, reduced costs for the manufacturing of imetelstat drug product and lower personnel related expenses as a result of the restructuring announced in March 2015, partially offset by higher payments to Janssen in 2016 under the cost-sharing arrangement for imetelstat clinical development.

Cash Flows from Investing Activities

Net cash provided by investing activities was $23.0 million, $8.8 million and $73,000 in 2017, 2016 and 2015, respectively. The increase in net cash provided by investing activities in 2017 compared to 2016 and 2016 compared to 2015 primarily reflects a higher rate of maturities than purchases of marketable securities in 2017 and 2016, respectively.

For the three years ended December 31, 2017, we purchased approximately $147,000 in property and equipment, none of which was financed through equipment financing arrangements.

Cash Flows from Financing Activities

Net cash provided by financing activities in 2017, 2016 and 2015 was $1.1 million, $1.2 million and $2.6 million, respectively. The decrease in net cash provided by financing activities in 2017 compared to 2016 primarily reflects the net result of the receipt of higher cash proceeds in 2016 from the exercise of outstanding stock options under our equity plans, partially offset by the receipt of net cash proceeds of approximately $1.1 million, after deducting sales commissions and offering expenses payable by us, from the sale of an aggregate of 614,230 shares of our common stock pursuant to the 2015 Sales Agreement with MLV. The decrease in net cash provided by financing activities in 2016 compared to 2015 primarily reflects the receipt of higher cash proceeds in 2015 from the exercise of outstanding stock options under our equity plans and the receipt of cash proceeds of approximately $881,000 in March 2015 from the exercise of warrants to purchase 235,000 shares of our common stock at an exercise price of $3.75 per share.

Significant Cash and Contractual Obligations

As of December 31, 2017, our contractual obligations for the next five years and thereafter were as follows:

Contractual Obligations [1]	Payments Due by Period				
	Total	Less Than 1 Year	1-3 Years	4 - 5 Years	After 5 Years
			(In thousands)		
Equipment lease	$ 33	$ 11	$ 22	$ —	$ —
Operating lease[2]	1,435	678	757	—	—
License fees[3]	240	60	75	30	75
Total contractual cash obligations	$ 1,708	$ 749	$ 854	$ 30	$ 75

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

(2) In September 2017, we amended the lease agreement for our premises at 149 Commonwealth Drive, Menlo Park, California, to extend the lease term from February 2018 through January 2020. Our amended lease at 149 Commonwealth Drive includes an option to extend the lease for one additional period of two years. Operating lease obligations in the table above do not assume the exercise by us of the option to extend the lease or any right of termination.

(3) License fees are comprised of minimum annual license payments under our existing license agreements with several universities and companies for the right to use intellectual property related to technologies that we have in-licensed.

Off-Balance Sheet Arrangements

We have not engaged in any off-balance sheet arrangements, including the use of structured finance, special purpose entities or variable interest entities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

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

Credit Risk. We currently place our cash, restricted cash, cash equivalents and marketable securities with four financial institutions in the United States. Deposits with banks may exceed the amount of insurance provided on such deposits. While we monitor the cash balances in our operating accounts and adjust the cash balances as appropriate, these cash balances could be impacted if the underlying financial institutions fail or could be subject to other adverse conditions in the financial markets. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash equivalents and marketable securities. Cash equivalents and marketable securities currently consist of money market funds, U.S. government-sponsored enterprise securities, commercial paper and corporate notes. Our investment policy, approved by the audit committee of our board of directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations. We limit our credit and liquidity risks through our investment policy and through regular reviews of our portfolio against our policy. To date, we have not experienced any loss or lack of access to cash in our operating accounts or to our cash equivalents and marketable securities in our investment portfolio. The effect of a hypothetical decrease of 10% in the average yield earned on our cash equivalents and marketable securities would have resulted in an immaterial decrease in our interest income for the year ended December 31, 2017.

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

The fair value of our cash equivalents and marketable securities at December 31, 2017 was $107.6 million. These investments include $15.0 million of cash equivalents which have an original maturity of three months or less, $78.4 million of short-term investments which are due in less than one year and $14.2 million of long-term investments which are due in one to two years. In accordance with our investment policy, which is approved by our audit committee, we primarily invest in marketable securities with at least an investment grade rating to minimize interest rate and credit risk as well as to provide for an immediate source of funds. Although changes in interest rates may affect the fair value of the marketable securities portfolio and cause unrealized gains or losses, such gains or losses would not be realized unless the investments are sold. Due to the nature of our investments, which are primarily money market funds, U.S. government-sponsored enterprise securities, commercial paper and corporate notes, we have concluded that there is no material interest rate risk exposure and a hypothetical movement of 1% in market interest rates would not have a significant impact on the total realized value of our portfolio.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Geron Corporation

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Geron Corporation (the Company) as of December 31, 2017 and 2016, the related statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated March 16, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1992.
Redwood City, California
March 16, 2018

GERON CORPORATION

BALANCE SHEETS

	December 31, 2017	December 31, 2016
	(In thousands, except share and per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 16,335	$ 12,810
Restricted cash	268	268
Marketable securities	78,351	102,035
Interest and other receivables	436	475
Prepaid assets	580	524
Total current assets	95,970	116,112
Noncurrent marketable securities	14,241	13,954
Property and equipment, net	102	183
	$ 110,313	$ 130,249
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 503	$ 225
Accrued compensation and benefits	3,385	2,843
Accrued collaboration charges	1,702	3,367
Accrued liabilities	926	1,434
Total current liabilities	6,516	7,869
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 3,000,000 shares authorized; no shares issued and outstanding at December 31, 2017 and 2016	—	—
Common stock, $0.001 par value; 300,000,000 shares authorized; 159,877,239 and 159,158,636 shares issued and outstanding at December 31, 2017 and 2016, respectively	160	159
Additional paid-in capital	1,089,684	1,080,198
Accumulated deficit	(985,840)	(957,924)
Accumulated other comprehensive loss	(207)	(53)
Total stockholders' equity	103,797	122,380
	$ 110,313	$ 130,249

See accompanying notes.

GERON CORPORATION

STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2017	2016	2015
	(In thousands, except share and per share data)		
Revenues:			
Collaboration revenue	$ —	$ —	$ 35,000
License fees and royalties	1,065	6,162	1,371
Total revenues	1,065	6,162	36,371
Operating expenses:			
Research and development	11,033	18,047	17,831
Restructuring charges	—	—	1,306
General and administrative	19,287	18,761	17,793
Total operating expenses	30,320	36,808	36,930
Loss from operations	(29,255)	(30,646)	(559)
Unrealized gain on derivatives	—	—	16
Interest and other income	1,416	1,192	677
Interest and other expense	(77)	(83)	(88)
Net (loss) income	$ (27,916)	$ (29,537)	$ 46
Net (loss) income per share:			
Basic	$ (0.18)	$ (0.19)	$ 0.00
Diluted	$ (0.18)	$ (0.19)	$ 0.00
Shares used in computing net (loss) income per share:			
Basic	159,224,986	159,045,644	158,036,162
Diluted	159,224,986	159,045,644	162,663,894

See accompanying notes.

GERON CORPORATION

STATEMENTS OF COMPREHENSIVE LOSS

	Year Ended December 31,		
	2017	2016	2015
		(In thousands)	
Net (loss) income	$ (27,916)	$ (29,537)	$ 46
Net unrealized (loss) gain on marketable securities	(154)	160	(129)
Comprehensive loss	$ (28,070)	$ (29,377)	$ (83)

See accompanying notes.

GERON CORPORATION

STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Additional Paid-In	Accumulated	Accumulated Other Comprehensive	Total Stockholders'
	Shares	Amount	Capital	Deficit	Loss	Equity
	(In thousands, except share data)					
Balances at December 31, 2014	157,429,871	$ 157	$1,059,072	$ (928,433)	$ (84)	$ 130,712
Net income	—	—	—	46	—	46
Other comprehensive loss	—	—	—	—	(129)	(129)
Stock-based compensation related to issuance of common stock and options in exchange for services	18,077	—	364	—	—	364
Issuance of common stock upon exercise of warrants	235,000	1	880	—	—	881
Issuances of common stock under equity plans, net of cancellations of non-vested restricted stock	1,098,411	1	1,693	—	—	1,694
Stock-based compensation for equity-based awards to employees and directors	—	—	8,397	—	—	8,397
401(k) contribution	—	—	161	—	—	161
Balances at December 31, 2015	158,781,359	159	1,070,567	(928,387)	(213)	142,126
Net loss	—	—	—	(29,537)	—	(29,537)
Other comprehensive income	—	—	—	—	160	160
Stock-based compensation related to issuance of common stock and options in exchange for services	21,541	—	156	—	—	156
Issuances of common stock under equity plans	355,736	—	1,169	—	—	1,169
Stock-based compensation for equity-based awards to employees and directors	—	—	8,245	—	—	8,245
401(k) contribution	—	—	61	—	—	61
Balances at December 31, 2016	159,158,636	159	1,080,198	(957,924)	(53)	122,380
Net loss	—	—	—	(27,916)	—	(27,916)
Other comprehensive loss	—	—	—	—	(154)	(154)
Issuance of common stock in connection with at market offering, net of issuance costs of $114	614,230	1	1,059	—	—	1,060
Stock-based compensation related to issuance of common stock and options in exchange for services	72,066	—	200	—	—	200
Issuances of common stock under equity plans	32,307	—	51	—	—	51
Stock-based compensation for equity-based awards to employees and directors	—	—	8,144	—	—	8,144
401(k) contribution	—	—	32	—	—	32
Balances at December 31, 2017	159,877,239	$ 160	$1,089,684	$ (985,840)	$ (207)	$ 103,797

See accompanying notes.

GERON CORPORATION

STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2017	2016	2015
		(In thousands)	
Cash flows from operating activities:			
Net (loss) income	$ (27,916)	$ (29,537)	$ 46
Adjustments to reconcile net (loss) income to net cash used in operating activities:			
Depreciation and amortization	76	81	56
Loss (gain) on retirement/sales of property and equipment	5	(16)	—
Accretion and amortization on investments, net	273	552	2,098
Loss on sales of marketable securities	—	—	1
Stock-based compensation for services by non-employees	200	156	364
Stock-based compensation for employees and directors	8,144	8,245	8,397
Amortization related to 401(k) contributions	32	61	161
Unrealized gain on derivatives	—	—	(16)
Changes in assets and liabilities:			
Interest and other receivables	39	731	(243)
Prepaid assets	(56)	123	89
Accounts payable	278	65	(873)
Accrued compensation and benefits	542	(183)	(1,187)
Accrued collaboration charges	(1,665)	1,039	2,328
Accrued liabilities	(508)	314	(417)
Deferred revenue	—	—	(35,000)
Net cash used in operating activities	(20,556)	(18,369)	(24,196)
Cash flows from investing activities:			
Restricted cash transfer	—	(1)	(1)
Purchases of property and equipment	—	(57)	(90)
Proceeds from sales of property and equipment	—	16	—
Purchases of marketable securities	(100,006)	(129,250)	(206,459)
Proceeds from sales/calls of marketable securities	—	—	4,242
Proceeds from maturities of marketable securities	122,976	138,054	202,381
Net cash provided by investing activities	22,970	8,762	73
Cash flows from financing activities:			
Proceeds from issuances of common stock	1,111	1,169	2,575
Net cash provided by financing activities	1,111	1,169	2,575
Net increase (decrease) in cash and cash equivalents	3,525	(8,438)	(21,548)
Cash and cash equivalents at the beginning of the period	12,810	21,248	42,796
Cash and cash equivalents at the end of the period	$ 16,335	$ 12,810	$ 21,248

See accompanying notes.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

Geron Corporation, or we or Geron, was incorporated in the State of Delaware on November 28, 1990. We are a biopharmaceutical company that currently supports the clinical stage development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies, by Janssen Biotech, Inc., or Janssen. Principal activities to date have included obtaining financing, securing operating facilities and conducting research and development. In November 2014, we entered into an exclusive collaboration and license agreement, or the Collaboration Agreement, with Janssen to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. Under the Collaboration Agreement, Janssen is wholly responsible for the worldwide development, manufacturing, seeking regulatory approval for and commercialization of, imetelstat, which was our sole product candidate.

Net Income (Loss) Per Share

Basic net income (loss) per share is calculated by dividing net income (loss) by the weighted-average number of shares of common stock outstanding during the periods presented, without consideration for potential common shares. Diluted net income per share is calculated by adjusting the weighted-average number of shares of common stock outstanding for the dilutive effect of potential common shares outstanding for the periods presented, as determined using the treasury-stock method. Potential dilutive securities primarily consist of outstanding stock options, restricted stock awards and warrants to purchase our common stock. For periods in which we have incurred a net loss, potential common shares outstanding for the periods presented, as determined using the treasury-stock method, are excluded, as their effect would be anti-dilutive, resulting in the same number of shares being used for the calculation of basic and diluted net loss per share. For all periods presented in the accompanying statements of operations, the net income (loss) applicable to common stockholders is equal to the reported net income (loss).

	Year Ended December 31,		
(In thousands, except share and per share data)	2017	2016	2015
Net (loss) income	$ (27,916)	$ (29,537)	$ 46
Weighted-average shares:			
Basic	159,224,986	159,045,644	158,036,162
Effect of dilutive securities:			
Stock options and restricted stock awards	—	—	4,627,732
Diluted	159,224,986	159,045,644	162,663,894
Net (loss) income per share:			
Basic	$ (0.18)	$ (0.19)	$ 0.00
Diluted	$ (0.18)	$ (0.19)	$ 0.00

Because we were in a net loss position for 2017 and 2016, 2,389,310 and 3,023,520 potential common shares, respectively, related to outstanding stock options and restricted stock awards (as determined using the treasury-stock method at the estimated average market value) were excluded from the diluted net loss per share calculation as their effect would have been anti-dilutive. In addition for 2017, 2016 and 2015, 14,475,616, 11,352,766 and 9,375,851 potentially dilutive securities, respectively, were excluded from the treasury-stock method and calculation of diluted net income (loss) per share as their effect would have been anti-dilutive.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Use of Estimates

The accompanying financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or GAAP. The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, we evaluate our estimates, including those related to accrued liabilities, revenue recognition, fair value of marketable securities, income taxes, and stock-based compensation. We base our estimates on historical experience and on various other market specific and relevant assumptions that we believe to be reasonable under the circumstances. Actual results could differ from those estimates.

Fair Value of Financial Instruments

Cash Equivalents and Marketable Securities

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

We classify our marketable securities as available-for-sale. We record available-for-sale securities at fair value with unrealized gains and losses reported in accumulated other comprehensive income (loss) in stockholders' equity. Realized gains and losses are included in interest and other income and are derived using the specific identification method for determining the cost of securities sold and have been insignificant to date. Dividend and interest income are recognized when earned and included in interest and other income in our statements of operations. We recognize a charge when the declines in the fair values below the amortized cost basis of our available-for-sale securities are judged to be other-than-temporary. We consider various factors in determining whether to recognize an other-than-temporary charge, including whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security before recovery of the amortized cost basis. Declines in market value judged as other-than-temporary result in a charge to interest and other income. We have not recorded any other-than-temporary impairment charges on our available-for-sale securities for the years ended December 31, 2017, 2016 and 2015. See Note 2 on Fair Value Measurements.

Cost Method Investments

We use the cost method of accounting for non-marketable equity securities where our ownership represents less than 20% of such entity, and we cannot exert significant influence over its operations. These securities are carried at cost and adjusted for impairments.

Fair Value of Derivatives

Non-employee options classified as derivative liabilities are marked to fair value at each financial reporting date with any resulting changes in fair value being recorded in the statements of operations as unrealized gain (loss) on derivatives. The non-employee options continue to be reported as a derivative liability until such time as the instruments are exercised or expire, at which time these instruments are marked to fair value and reclassified from liabilities to stockholders' equity. As of March 31, 2015, all non-employee options classified as derivative liabilities expired unexercised.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Revenue Recognition

We recognize revenue for each unit of accounting when all of the following criteria have been met: (a) persuasive evidence of an arrangement exists, (b) delivery has occurred or services have been rendered, (c) the seller's price to the buyer is fixed or determinable, and (d) collectability is reasonably assured. Amounts received prior to satisfying these revenue recognition criteria are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current deferred revenue. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as noncurrent deferred revenue.

License and/or Collaboration Agreements

In addition to the Collaboration Agreement (which is more fully described in Note 4 on License Agreements), we have entered into several license or collaboration agreements with various oncology, diagnostics, research tools and biologics production companies. Economic terms in these agreements may include non-refundable upfront license payments in cash or equity securities, option payments in cash or equity securities, cost reimbursements, cost-sharing arrangements, milestone payments, royalties on future sales of products, or any combination of these items. In applying the appropriate revenue recognition guidance related to these agreements, we first assess whether the arrangement contains multiple elements. In this evaluation, we consider: (i) the deliverables included in the arrangement and (ii) whether the individual deliverables represent separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation involves subjective determinations and requires us to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a standalone basis, and (ii) if the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. In assessing whether an item has standalone value, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner or licensee and the availability of the associated expertise in the general marketplace. In addition, we consider whether the collaboration partner or licensee can use the other deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. We then apply the applicable revenue recognition criteria noted above to each of the separate units of accounting in determining the appropriate period and pattern of recognition. We determine how to allocate arrangement consideration to identified units of accounting based on the selling price hierarchy provided under relevant accounting guidance. The estimated fair value of deliverables under the arrangement may be derived using a best estimate of selling price if vendor-specific-objective evidence and third-party evidence are not available.

Upfront non-refundable signing, license or non-exclusive option fees are recognized as revenue: (i) when rights to use the intellectual property have been delivered, if the license has standalone value from the other deliverables to be provided under the agreement, or (ii) over the term of the agreement if we have continuing performance obligations, as the arrangement would be accounted for as a single unit of accounting. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

At the inception of an arrangement that includes milestone payments, we assess whether each milestone is substantive and at risk on the basis of the contingent nature of the milestone. This evaluation includes an assessment of whether: (i) the consideration is commensurate with either (1) our performance to achieve the milestone or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from our performance to achieve the milestone, (ii) the consideration relates solely to past performance and (iii) the consideration is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement. We consider various factors, such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone, in making this assessment. There is considerable judgment involved in determining whether a milestone satisfies all of the criteria required to conclude that a milestone is substantive. Milestone payments for milestones that are considered substantive would be recognized as revenue in their entirety upon successful accomplishment of the milestone, assuming all other revenue recognition criteria are met. Milestone payments for milestones that are not considered substantive would be recognized as revenue over the remaining period of performance, assuming all other revenue recognition criteria are met.

Our license and collaboration agreements with certain partners also provide for contingent payments to us based solely upon the performance of the respective partner. For such contingent amounts, we recognize the payments as revenue when earned under the applicable contract, which is generally upon completion of performance by the respective partner, provided that collection is reasonably assured.

Royalties are recognized as earned in accordance with contract terms when royalties from licensees can be reasonably estimated and collection is reasonably assured. If royalties cannot be reasonably estimated or collection of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received. Revenue from commercial milestone payments is accounted for as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met and we have no performance obligations related to the milestone.

Cost-sharing expenses are recorded as earned or owed based on the performance requirements by both parties under the respective contracts. For arrangements in which we and our collaboration partner in the agreement are exposed to significant risks and rewards that depend on the commercial success of the activity, we recognize payments between the parties on a net basis and record such amounts as a reduction or addition to research and development expense. For arrangements in which we have agreed to perform certain research and development services for our collaboration partner and are not exposed to significant risks and rewards that depend on the commercial success of the activity, we recognize the respective cost reimbursements as revenue under the collaborative agreement as the related research and development services are rendered.

Restricted Cash

Restricted cash consists of funds maintained in a separate certificate of deposit account for credit card purchases.

Research and Development Expenses

Research and development expenses consist of expenses incurred in identifying, developing and testing product candidates resulting from our independent efforts as well as efforts associated with collaborations. These expenses include, but are not limited to, in-process research and development acquired in an asset acquisition and deemed to have no alternative future use, payroll and personnel expense, lab supplies, preclinical studies, clinical trials, including support for investigator-sponsored clinical trials, raw materials to manufacture clinical trial drugs, manufacturing costs for research and clinical trial materials, sponsored research at other labs, consulting, costs to maintain technology licenses, our proportionate share of research and development costs under cost-sharing arrangements with collaboration partners and research-related overhead. Research and development costs are expensed as incurred, including costs incurred under our collaboration and/or license agreements.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

For the clinical development activities being conducted by Janssen under the Collaboration Agreement, we monitor patient enrollment levels and related activities to the extent possible through discussions with Janssen personnel and base our estimates on the best information available at the time. However, additional information may become available to us which would allow us to make a more accurate estimate in future periods. In this event, we may be required to record adjustments to research and development expenses in future periods when the actual level of activity becomes more certain.

Depreciation and Amortization

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

Stock-Based Compensation

We maintain various stock incentive plans under which stock options and restricted stock awards are granted to employees, directors and consultants. We also have an employee stock purchase plan for all eligible employees. We recognize stock-based compensation expense based on the grant-date fair values of these instruments on a straight-line basis over the requisite service period, which is generally the vesting period. The determination of grant-date fair values for our stock options and employee stock purchases using the Black Scholes option-pricing model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. The grant-date fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant.

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of: (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete. We recognize stock-based compensation expense for the fair value of the vested portion of non-employee stock-based awards in our statements of operations. For additional information, see Note 8 on Stockholders' Equity.

Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss includes certain changes in stockholders' equity which are excluded from net income (loss). Accumulated other comprehensive loss on our balance sheets as of December 31, 2017 and 2016 is solely comprised of net unrealized losses on marketable securities.

Income Taxes

We maintain deferred tax assets and liabilities that reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and are subject to tests of recoverability. Our deferred tax assets include net operating loss carryforwards, research credits and capitalized research and development. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Our net deferred tax asset has been fully offset by a valuation allowance because of our history of losses. Any potential accrued interest and penalties related to unrecognized tax benefits would be recorded as income tax expense.

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Concentrations of Customers and Suppliers

The majority of our revenues was earned in the United States. Two customers accounted for approximately 39% of our 2017 revenues. Approximately 81% of our 2016 revenues represented an upfront payment from Janssen Pharmaceuticals, Inc., or Janssen Pharmaceuticals, in connection with a license agreement signed in September 2016, or the License Agreement. Approximately 96% of our 2015 revenues represented an upfront payment from Janssen under the imetelstat Collaboration Agreement.

In accordance with the Collaboration Agreement, Janssen is now responsible for the manufacture and management of the supply of imetelstat on a global basis for clinical trials and, after any regulatory approval, all commercial activities. Janssen contracts third-party manufacturers to produce GMP-grade drugs for preclinical and clinical studies. Janssen also contracts for starting materials to supply those manufacturers and for its own use. Certain development and clinical activities may be delayed if Janssen is unable to obtain sufficient quantities of starting materials or GMP-grade drugs from current third-party suppliers or other third-party sources.

Segment Information

Our executive management team represents our chief decision maker. We view our operations as a single segment, the development of therapeutic products for oncology. As a result, the financial information disclosed herein materially represents all of the financial information related to our principal operating segment.

Recent Accounting Pronouncements Not Yet Effective

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update No. 2014-09, or ASU 2014-09, which created Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*, or Topic 606, and superseded the revenue recognition requirements in Accounting Standards Codification Topic 605, *Revenue Recognition*, including most industry-specific revenue recognition guidance throughout the Industry Topics of the Codification. In summary, the core principle of Topic 606 is to recognize revenue when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. Companies are allowed to select between two transition methods: (1) a full retrospective transition method with the application of the new guidance to each prior reporting period presented, or (2) a modified retrospective transition method that recognizes the cumulative effect on prior periods at the date of adoption together with additional footnote disclosures. The amendments in ASU 2014-09 are effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. In March, April, May and December 2016, the FASB issued Accounting Standards Update No. 2016-08 (Topic 606), *Revenue From Contracts With Customers: Principal vs. Agent Considerations*, or ASU 2016-08, Accounting Standards Update No. 2016-10 (Topic 606), *Revenue From Contracts with Customers: Identifying Performance Obligations and Licensing*, or ASU 2016-10, Accounting Standards Update No. 2016-12 (Topic 606), *Revenue From Contracts with Customers: Narrow-Scope Improvements and Practical Expedients*, or ASU 2016-12, and Accounting Standards Update No. 2016-20 (Topic 606), *Revenue from Contracts with Customers*: *Technical Corrections and Improvements to Topic 606,* or ASU 2016-20, respectively, to provide supplemental adoption guidance and clarification to ASU 2014-09. We will adopt ASU 2014-09 and its related supplemental guidance on January 1, 2018 using the modified retrospective transition method.

The new revenue standard is principles-based and the interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretations, industry practice, and guidance may evolve as companies and the accounting profession work to implement this new standard. We have assessed the differences in accounting for our existing contracts under the new guidance compared to current revenue accounting standards. We have not identified any material differences in the accounting treatment under ASU 2014-09 compared to the current accounting treatment for the Collaboration Agreement with Janssen and the License Agreement with Janssen Pharmaceuticals, which are our most significant license agreements. With the adoption of ASU 2014-09, we expect royalty revenues from product sales by licensees of our human telomerase reverse transcriptase, or hTERT, technology and cell-based research products to be recognized earlier than under our current accounting policy for revenue recognition. Accordingly, we expect to record a one-time cumulative catch-up adjustment in 2018 to reflect

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

estimated royalty revenues on product sales earned in 2017 for which payments have not yet been received. We do not expect that the adoption of ASU 2014-09 will have a material impact on our financial statements and related disclosures.

In January 2016, the FASB issued Accounting Standards Update No. 2016-01, *Financial Instruments - Overall: Recognition and Measurement of Financial Assets and Financial Liabilities*, or ASU 2016-01, which requires equity investments to be measured at fair value with changes in fair value recognized in net income. However, equity investments without readily determinable fair values can either be measured at fair value or use a measurement alternative which adjusts cost for changes in observable prices minus impairment. ASU 2016-01 requires separate presentation of financial assets and liabilities by category and form. ASU 2016-01 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. To further clarify ASU 2016-01, the FASB issued Accounting Standards Update No. 2018-03, *Technical Corrections and Improvements to Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*, or ASU 2018-03, in February 2018. ASU 2018-03 requires application of a prospective transition approach only for those equity investments for which the new measurement alternative is being applied. Additionally, if an entity voluntarily discontinues using the measurement alternative, the investment and all identical or similar investments of the same issuer must be measured at fair value. ASU 2018-03 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years beginning after June 15, 2018. Early adoption is permitted. We currently hold equity investments without readily determinable fair values that are accounted for under the cost method and are evaluating the method and timing of adoption of ASU 2016-01 and ASU 2018-03. The adoption of ASU 2016-01 and ASU 2018-03 may have a material impact on our financial statements and related disclosures.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases (Topic 842)*, or ASU 2016-02. ASU 2016-02 requires an entity to recognize a right-of-use asset and lease liability for all leases with terms of more than 12 months. Recognition, measurement and presentation of expenses will depend on classification as a finance or operating lease. Certain quantitative and qualitative disclosures about leasing arrangements also are required. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. The updated guidance requires a modified retrospective adoption. We are currently evaluating the impact that the adoption of ASU 2016-02 will have on our financial statements and related disclosures and have not made any decision regarding the timing of adoption.

In August 2016, the FASB issued Accounting Standards Update No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments*, or ASU 2016-15, to clarify how certain cash receipts and cash payments are presented and classified in the statement of cash flows. ASU 2016-15 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. ASU 2016-15 must be applied retrospectively to each period presented. We will adopt ASU 2016-15 on January 1, 2018. We do not expect that the adoption of ASU 2016-15 will have a material impact on our financial statements and related disclosures.

In November 2016, the FASB issued Accounting Standards Update No. 2016-18, *Statement of Cash Flows (Topic 230) Restricted Cash*, or ASU 2016-18, to address the diversity in practice in the classification and presentation of changes in restricted cash on the statement of cash flows. ASU 2016-18 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. ASU 2016-18 must be applied using a retrospective transition method to each period presented. We will adopt ASU 2016-18 on January 1, 2018. We do not expect that the adoption of ASU 2016-18 will have a material impact on our financial statements and related disclosures.

In May 2017, the FASB issued Accounting Standards Update No. 2017-09, *Compensation — Stock Compensation: Scope of Modification Accounting*, or ASU 2017-09. ASU 2017-09 clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. ASU 2017-09 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. The amendments in ASU 2017-09 should be applied prospectively to an award modified on or after the adoption date. We will adopt ASU 2017-09 on January 1, 2018. We do not expect that the adoption of ASU 2017-09 will have a material impact on our financial statements and related disclosures.

2. FAIR VALUE MEASUREMENTS

Cash Equivalents and Marketable Securities

Cash equivalents, restricted cash and marketable securities by security type at December 31, 2017 were as follows:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Included in cash and cash equivalents:				
Money market funds	$ 11,030	$ —	$ —	$ 11,030
Commercial paper	2,242	—	—	2,242
Corporate notes	1,750	—	(1)	1,749
	$ 15,022	$ —	$ (1)	$ 15,021
Restricted cash:				
Certificate of deposit	$ 268	$ —	$ —	$ 268
Marketable securities:				
Government-sponsored enterprise securities (due in less than one year)	$ 12,500	$ —	$ (40)	$ 12,460
Commercial paper (due in less than one year)	10,928	4	(1)	10,931
Corporate notes (due in less than one year)	55,067	—	(107)	54,960
Corporate notes (due in one to two years)	14,303	—	(62)	14,241
	$ 92,798	$ 4	$ (210)	$ 92,592

Cash equivalents, restricted cash and marketable securities by security type at December 31, 2016 were as follows:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Included in cash and cash equivalents:				
Money market funds	$ 11,193	$ —	$ —	$ 11,193
Restricted cash:				
Certificate of deposit	$ 268	$ —	$ —	$ 268
Marketable securities:				
Government-sponsored enterprise securities (due in less than one year)	$ 5,000	$ —	$ (3)	$ 4,997
Government-sponsored enterprise securities (due in one to two years)	12,500	—	(42)	12,458
Commercial paper (due in less than one year)	31,024	50	(5)	31,069
Corporate notes (due in less than one year)	66,012	4	(47)	65,969
Corporate notes (due in one to two years)	1,506	—	(10)	1,496
	$ 116,042	$ 54	$ (107)	$ 115,989

2. FAIR VALUE MEASUREMENTS (Continued)

Cash equivalents and marketable securities with unrealized losses at December 31, 2017 and 2016 were as follows:

	Less Than 12 Months		12 Months or Greater		Total	
(In thousands)	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
As of December 31, 2017:						
Government-sponsored enterprise securities (due in less than one year)	$ —	$ —	$ 12,460	$ (40)	$ 12,460	$ (40)
Commercial paper (due in less than one year)	7,717	(1)	—	—	7,717	(1)
Corporate notes (due in less than one year)	55,210	(106)	1,499	(2)	56,709	(108)
Corporate notes (due in one to two years)	14,241	(62)	—	—	14,241	(62)
	$ 77,168	$ (169)	$ 13,959	$ (42)	$ 91,127	$ (211)
As of December 31, 2016:						
Government-sponsored enterprise securities (due in less than one year)	$ 4,997	$ (3)	$ —	$ —	$ 4,997	$ (3)
Government-sponsored enterprise securities (due in one to two years)	12,458	(42)	—	—	12,458	(42)
Commercial paper (due in less than one year)	8,365	(5)	—	—	8,365	(5)
Corporate notes (due in less than one year)	39,218	(37)	6,944	(10)	46,162	(47)
Corporate notes (due in one to two years)	1,496	(10)	—	—	1,496	(10)
	$ 66,534	$ (97)	$ 6,944	$ (10)	$ 73,478	$ (107)

The gross unrealized losses related to government-sponsored enterprise securities, commercial paper and corporate notes as of December 31, 2017 and 2016 were due to changes in interest rates. We determined that the gross unrealized losses on our cash equivalents and marketable securities as of December 31, 2017 and 2016 were temporary in nature. We review our investments quarterly to identify and evaluate whether any investments have indications of possible impairment. Factors considered in determining whether a loss is temporary include the length of time and extent to which the fair value has been less than the cost basis and whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security before recovery of the amortized cost basis. We currently do not intend to sell these securities before recovery of their amortized cost bases.

Fair Value on a Recurring Basis

We categorize financial instruments recorded at fair value on our balance sheets based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

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

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

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

2. FAIR VALUE MEASUREMENTS (Continued)

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

Money market funds are categorized as Level 1 within the fair value hierarchy as their fair values are based on quoted prices available in active markets. U.S. government-sponsored enterprise securities, commercial paper and corporate notes are categorized as Level 2 within the fair value hierarchy as their fair values are estimated by using pricing models, quoted prices of securities with similar characteristics or discounted cash flows.

The following table presents information about our financial instruments that are measured at fair value on a recurring basis as of December 31, 2017 and 2016 and indicates the fair value category assigned.

	Fair Value Measurements at Reporting Date Using			
(In thousands)	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
As of December 31, 2017:				
Money market funds[1]	$ 11,030	$ —	$ —	$ 11,030
Government-sponsored enterprise securities[2]	—	12,460	—	12,460
Commercial paper[1][2]	—	13,173	—	13,173
Corporate notes[1][2][3]	—	70,950	—	70,950
Total	$ 11,030	$ 96,583	$ —	$ 107,613
As of December 31, 2016:				
Money market funds[1]	$ 11,193	$ —	$ —	$ 11,193
Government-sponsored enterprise securities[2][3]	—	17,455	—	17,455
Commercial paper[2]	—	31,069	—	31,069
Corporate notes[2][3]	—	67,465	—	67,465
Total	$ 11,193	$ 115,989	$ —	$ 127,182

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

(2) Included in current portion of marketable securities on our balance sheets.

(3) Included in noncurrent portion of marketable securities on our balance sheets.

Cost Method Investment

In December 2007, we granted a license to our hTERT technology for use in human diagnostics to Sienna Cancer Diagnostics Limited, or Sienna, which was a privately held company in Australia. In connection with the license, we received 13,842,625 ordinary shares in Sienna which we recorded at a zero cost basis under the cost method of accounting. On August 3, 2017, Sienna became a publicly traded company on the Australian Securities Exchange Limited, or ASX, under the ticker symbol SDX. Since our shares are subject to a 24-month trading restriction from the effective date of Sienna's listing on the ASX, we account for our investment in Sienna under the cost method of accounting since there is no readily determinable fair value for our shares, and such shares do not meet the definition of a marketable security. With the adoption of ASU 2016-01 and ASU 2018-03 in 2018, the method in which we account for our shares of Sienna will change. For additional information on ASU 2016-01 and ASU 2018-03, see the section entitled "Recent Accounting Pronouncements Not Yet Effective" in Note 1 on Organization and Summary of Significant Accounting Policies.

2. FAIR VALUE MEASUREMENTS (Continued)

Credit Risk

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

3. PROPERTY AND EQUIPMENT

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

	December 31,	
(In thousands)	2017	2016
Furniture and computer equipment	$ 711	$ 1,268
Lab equipment	—	12
Leasehold improvements	111	111
	822	1,391
Less accumulated depreciation and amortization	(720)	(1,208)
	$ 102	$ 183

4. LICENSE AGREEMENTS

Janssen Biotech, Inc. Collaboration and License Agreement

On November 13, 2014, we and Janssen entered into the Collaboration Agreement under which we granted to Janssen exclusive worldwide rights to develop and commercialize imetelstat for all human therapeutic uses, including hematologic myeloid malignancies. Upon the effectiveness of the Collaboration Agreement, we received $35,000,000 from Janssen as an upfront payment, which we classified as deferred revenue upon receipt.

Under the Collaboration Agreement, Janssen is wholly responsible for the development, manufacturing, seeking regulatory approval for and commercialization of, imetelstat worldwide. Janssen is currently conducting two clinical trials of imetelstat: a Phase 2 trial in myelofibrosis, referred to as IMbark, and a Phase 2/3 trial in myelodysplastic syndromes, referred to as IMerge. Development costs for IMbark and IMerge are being shared between us and Janssen on a 50/50 basis. Additionally, under the terms of the Collaboration Agreement, we remain responsible for prosecuting, at Janssen's direction, the patents licensed to Janssen at the time we entered into the Collaboration Agreement, with costs shared between us and Janssen on a 50/50 basis. The cost-sharing arrangement with Janssen began in January 2015. As of December 31, 2017, accrued collaboration charges of $1,702,000 on our balance sheet represent the net amount owed to Janssen for our proportionate share of development costs incurred by Janssen under the Collaboration Agreement for the three months ended December 31, 2017.

Following completion of the protocol-specified primary analysis of IMbark by Janssen, if completed, we expect Janssen to notify us of their decision, or a Continuation Decision, as to whether they elect to maintain the license rights granted to them under the Collaboration Agreement and continue to advance the development of imetelstat in any indication. In the event that IMbark is terminated early, or placed on clinical hold or suspended by a regulatory authority for an extended period of time, then Janssen must instead notify us of their Continuation Decision by the date that is approximately 24 months after the initiation of IMerge.

4. LICENSE AGREEMENTS (Continued)

In the event that Janssen provides an affirmative Continuation Decision, we then would have an option, or the U.S. Opt-In Rights, to share further U.S. development and promotion costs, including our share of development costs incurred to date by Janssen beyond IMbark or IMerge, in exchange for higher tiered royalty rates and higher future development and regulatory milestone payments if imetelstat is successfully developed and approved. If we exercise the U.S. Opt-In Rights, then we and Janssen would share U.S. development and promotion costs beyond IMbark and IMerge on a 20/80 basis (Geron 20%, Janssen 80%), we would receive a $65,000,000 milestone payment, or the Continuation Fee, at the time of an affirmative Continuation Decision, and would be eligible to receive additional potential payments of up to $470,000,000 for the achievement of certain development and regulatory milestones, up to $350,000,000 for the achievement of certain sales milestones, and tiered royalties ranging from a mid-teens up to low twenties percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen. In addition, if we exercise the U.S. Opt-In Rights, we then would also have a separate option, or the U.S. Co-Promotion Option, to provide 20% of the U.S. selling effort with our sales force personnel, in lieu of funding 20% of U.S. promotion costs, upon regulatory approval and commercial launch of imetelstat in the United States. Such co-promotion would be conducted under a Janssen prepared promotion plan, and in accordance with a co-promotion agreement to be agreed by the parties at the time of our exercise of the U.S. Co-Promotion Option. We would be responsible for all costs associated with establishing and maintaining our sales force in any conduct of such co-promotion. All product sales would be booked by Janssen. If we do not exercise the U.S. Opt-In Rights, then all further development and promotion costs beyond IMbark and IMerge would be borne by Janssen, we would receive the $65,000,000 Continuation Fee at the time of an affirmative Continuation Decision plus a $70,000,000 payment, or the Full U.S. Rights Fee, for Janssen's retention of full U.S. rights to imetelstat, and would be eligible to receive additional potential payments of up to $415,000,000 for the achievement of certain development and regulatory milestones, up to $350,000,000 for the achievement of certain sales milestones, and tiered royalties ranging from a double-digit up to mid-teens percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen.

Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including joint development and steering committees and working groups, to oversee and manage worldwide regulatory, development and manufacturing work under the joint clinical development plan and promotional activities (assuming we exercise the U.S. Opt-In Rights) for imetelstat, with Janssen responsible for the operational execution of those activities. In addition, both we and Janssen may propose to the joint development committee imetelstat development for any new indications not then provided for in the joint clinical development plan and if we and Janssen agree such development should be conducted outside of the joint clinical development plan, both we and Janssen would be entitled to independently undertake such development at the developing party's own cost, subject to the other party's obligation to provide reimbursement for its specified portion of the development costs plus a premium following marketing approval of imetelstat in such newly proposed indication as a result of such independent development. In the event that we do not exercise the U.S. Opt-In Rights following an affirmative Continuation Decision by Janssen, if any, the joint governance structure under the Collaboration Agreement would be dissolved, a joint oversight committee would monitor the progress of the collaboration, and we would have no further rights to conduct any independent imetelstat development.

After an affirmative Continuation Decision by Janssen, the Collaboration Agreement would remain in effect until the expiration of the last-to-expire patent or the royalty obligations on sales of imetelstat cease, unless terminated earlier. If Janssen does not effect an affirmative Continuation Decision, then the Collaboration Agreement would terminate and all rights to the imetelstat program would revert to us. Janssen may terminate the Collaboration Agreement at any time for convenience or due to a safety-related concern. If a notice of termination from Janssen occurs, we would be entitled to certain continued operational support and cost sharing under various circumstances and all rights to the imetelstat program would revert to us.

4. LICENSE AGREEMENTS (Continued)

The terms of the Collaboration Agreement contain multiple deliverables, which included at inception: (i) exclusive worldwide rights to develop and commercialize imetelstat for all indications, (ii) transfer of know-how and intellectual property, including our obligation to procure supply for manufacturing imetelstat for up to nine months after the effective date of the Collaboration Agreement, (iii) participation on the joint committees and working groups and (iv) potential participation in promoting imetelstat in the United States, if approved for commercial sale. We concluded the license for exclusive worldwide rights to develop and commercialize imetelstat has standalone value to Janssen based on the technical and financial resources of Janssen, including Janssen's drug development experience, sizeable employee base with specific experience in hematologic malignancies, and sufficient capital to independently develop imetelstat on a global basis. Since Janssen has final decision-making authority in the event a unanimous decision cannot be reached by the joint committees, we determined our participation on the joint committees does not represent a non-contingent deliverable under the Collaboration Agreement. In addition, we determined our potential participation in promoting imetelstat in the United States does not represent a non-contingent deliverable because such participation is uncertain and dependent on imetelstat being approved for commercial sale, which is not within our control. Accordingly, we determined delivery of the license rights granted by us to Janssen, together with our performance of certain technology transfer-related activities under the Collaboration Agreement, represents the sole non-contingent deliverable under the Collaboration Agreement associated with the upfront payment. Therefore, we accounted for our delivery of the imetelstat license rights and our performance of the technology transfer-related activities as a single unit of accounting. During the third quarter of 2015, we completed performance of the technology transfer-related activities to Janssen as outlined under the Collaboration Agreement. Combining this performance with the delivery of the imetelstat license rights, we fully recognized the $35,000,000 upfront payment from Janssen as collaboration revenue on our statements of operations in the third quarter of 2015.

We have determined that each of the additional potential milestone payments to us under the Collaboration Agreement, including: (i) the Continuation Fee at the time of an affirmative Continuation Decision, (ii) the Full U.S. Rights Fee, if we do not exercise the U.S. Opt-In Rights and (iii) payments based on the achievement of certain development, regulatory or sales milestones, represent contingent payments. Consequently, we will recognize revenue for these payments in their entirety upon successful accomplishment of the respective milestone. Royalties on future product sales of imetelstat, if successfully commercialized under the Collaboration Agreement, will be recognized as revenue when earned.

Janssen Pharmaceuticals, Inc. License Agreement

On September 15, 2016, we entered into the License Agreement with Janssen Pharmaceuticals whereby we granted to Janssen Pharmaceuticals an exclusive worldwide license, or the Exclusive License, under our proprietary patents for the research, development and commercialization of products based on specialized oligonucleotide backbone chemistry and novel amidates for ribonucleic acid interference, or RNAi, for the prevention, treatment and/or diagnosis of any and all human disorders, excluding cancers originating from the blood or bone marrow, and products whose predominant or primary mechanism of action is telomerase inhibition.

In addition to the Exclusive License, we granted to Janssen Pharmaceuticals a non-exclusive worldwide license, or the Non-Exclusive License, under our patents covering the synthesis of monomers, which are the building blocks of oligonucleotides, and certain know-how necessary for the research, development and commercialization of products under the Exclusive License. The patent rights under the Non-Exclusive License are also licensed exclusively to Janssen under the Collaboration Agreement, as described in the section above titled "Janssen Biotech, Inc. Collaboration and License Agreement", for the development and commercialization of imetelstat, and the License Agreement with Janssen Pharmaceuticals expressly excludes, and is subject to, the rights and licenses granted to Janssen under the Collaboration Agreement.

Under the terms of the License Agreement, Janssen Pharmaceuticals, at its sole expense, is required to use reasonable efforts to perform research, development and commercialization activities to obtain at least one licensed product to be researched, developed and commercialized under the License Agreement. We remain responsible for prosecuting the patent rights under the Exclusive License, with reasonable input provided by Janssen Pharmaceuticals, and the costs for such prosecution will be shared between us and Janssen Pharmaceuticals on a 50/50 basis. In addition, we remain responsible for prosecuting the patent rights under the Non-Exclusive License, as set forth under the terms of the Collaboration Agreement with Janssen.

4. LICENSE AGREEMENTS (Continued)

Under the terms of the License Agreement, we received $5,000,000 from Janssen Pharmaceuticals as a non-refundable upfront payment. We are also eligible to receive additional potential payments of up to an aggregate maximum total of $75,000,000 for the achievement of certain development and regulatory milestones and tiered royalties in the low single digit percentage range on worldwide net sales of each licensed product commercialized under the License Agreement in any countries where there are valid claims under the patent rights licensed to Janssen Pharmaceuticals.

The License Agreement will remain in effect until the expiration of the last-to-expire patent, unless terminated earlier. Janssen Pharmaceuticals may also terminate the License Agreement at will upon prior written notice to us. In the event of an early termination of the License Agreement, all licenses to Janssen Pharmaceuticals would terminate.

The terms of the License Agreement contain multiple deliverables, which included at inception the transfer of: (i) license rights under the Exclusive License and (ii) license rights and certain know-how under the Non-Exclusive License. We concluded the License Agreement has standalone value to Janssen Pharmaceuticals based on Janssen Pharmaceuticals' technical and financial resources, including drug development experience, sizeable employee base with specific knowledge of oligonucleotide chemistry, and sufficient capital to independently research, develop and commercialize products under the License Agreement on a global basis. Accordingly, we have determined delivery of the license rights granted by us to Janssen Pharmaceuticals under the Exclusive License and Non-Exclusive License, together with the transfer of certain know-how under the Non-Exclusive License, represents the sole non-contingent deliverable under the License Agreement associated with the upfront payment. Therefore, we accounted for our delivery of the license rights and transfer of know-how under the License Agreement as a single unit of accounting. During the third quarter of 2016, we completed the delivery of the license rights and transfer of know-how to Janssen Pharmaceuticals under the License Agreement. Accordingly, we fully recognized the $5,000,000 upfront payment from Janssen Pharmaceuticals as license fee revenue on our statements of operations in the third quarter of 2016.

We have determined that each of the additional potential development and regulatory milestone payments to us under the License Agreement represent contingent payments. Consequently, we will recognize revenue for these payments in their entirety upon successful accomplishment of the respective milestone. Royalties on potential future product sales under the License Agreement will be recognized as revenue when earned.

5. ACCRUED LIABILITIES

Accrued liabilities consisted of the following:

	December 31,	
(In thousands)	2017	2016
Professional legal and accounting fees	$ 272	$ 350
Clinical trial costs	516	723
Other	138	361
	$ 926	$ 1,434

6. RESTRUCTURING

With projected reduced operational demands as a result of the Collaboration Agreement with Janssen, on March 3, 2015, we announced an organizational resizing to reduce our workforce. For the year ended December 31, 2015, we recorded restructuring charges of approximately $1,306,000, net of non-cash adjustments, related to one-time termination benefits. These charges included $307,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period for certain stock options previously granted to employees affected by the restructuring. The restructuring resulted in aggregate cash expenditures of approximately $988,000 after adjustments and non-cash credits. All actions associated with this restructuring were completed in 2015. As of December 31, 2017 and 2016, we had no remaining obligations related to the restructuring.

7. COMMITMENTS AND CONTINGENCIES

Securities Lawsuits

We and certain of our officers were named as defendants in two purported class action securities lawsuits filed in the United States District Court for the Northern District of California, or the California District Court, as well as a third securities lawsuit, not styled as a class action, which was originally filed in the United States District Court for the Southern District of Mississippi, but subsequently transferred to the California District Court. These three cases, or the Class Action Lawsuits, which were based on the same factual background, were consolidated for all purposes.

On July 21, 2017, the California District Court entered an order and final judgment that dismissed with prejudice and released the claims asserted in the Class Action Lawsuits against all named defendants in connection with the Class Action Lawsuits, including us, and any claims that could have been asserted that arise or relate to the facts alleged in the Class Action Lawsuits, such that every member of the settlement class will be barred from asserting such claims in the future. In connection with the settlement of the Class Action Lawsuits, in April 2017, we paid $250,000 and our insurance providers paid $6,000,000 to a settlement escrow account to be paid to members of the settlement class, less payment of attorneys' fees and costs to plaintiff's counsel. The settlement does not constitute any admission of fault or wrongdoing by us or any of the individual defendants.

We do not expect to make any additional payments for and do not expect, and are not aware of, any additional claims arising from or related to the facts alleged in the Class Action Lawsuits and asserted by stockholders who have opted out of the settlement class in the Class Action Lawsuits. However, it is possible that additional lawsuits may be filed, or allegations may be made by stockholders, with respect to these same or other matters and also naming us and/or our officers and directors as defendants. Monitoring, initiating and defending against legal actions is time-consuming for our management, is likely to be expensive and may detract from our ability to fully focus our internal resources on our business activities. In addition, despite the availability of insurance, we may incur substantial legal fees and costs in connection with any additional litigation and such amounts could be material to our financial statements. We may expend significant resources in the settlement or defense of any additional lawsuits, and we may not prevail in such lawsuits. We have not established any reserve for any potential liability relating to any additional lawsuits.

Indemnifications to Officers and Directors

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

Operating Lease Commitment

On September 21, 2017, we amended the lease agreement for our premises at 149 Commonwealth Drive, Menlo Park, California, to extend the lease term from February 2018 through January 2020. As of December 31, 2017, operating lease obligations under the amended lease agreement include aggregate future minimum payments of approximately $1,435,000, of which payments of approximately $678,000, $699,000 and $58,000 are due in 2018, 2019 and 2020, respectively. Rent expense under our operating leases was approximately $691,000, $708,000 and $878,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

7. COMMITMENTS AND CONTINGENCIES (Continued)

Severance Plan

We have an Amended and Restated Severance Plan, or Severance Plan, that applies to all employees that are not subject to performance improvement plans, and provides for, among other benefits: (i) a severance payment upon a Change of Control Triggering Event and Separation from Service and (ii) a severance payment for each non-executive employee upon a Non-Change of Control Triggering Event and Separation from Service. As defined in the Severance Plan, a Change of Control Triggering Event and Separation from Service requires a "double trigger" where: (i) an employee is terminated by us without cause in connection with a change of control or within 12 months following a change of control provided, however, that if an employee is terminated by us in connection with a change of control but immediately accepts employment with our successor or acquirer, the employee will not be eligible for the benefits outlined in the Severance Plan, (ii) an employee resigns because in connection with a change of control, the offered terms of employment (new or continuing) by us or our successor or acquirer within 30 days after the change of control results in a material change in the terms of employment, or (iii) after accepting (or continuing) employment with us after a change of control, an employee resigns within 12 months following a change of control due to a material change in the terms of employment. Under the Severance Plan, a Non-Change of Control Triggering Event and Separation from Service is defined as an event where a non-executive employee is terminated by us without cause. Severance payments range from two to 18 months of base salary, depending on the employee's position with us, payable in a lump sum payment. The Severance Plan also provides that the provisions of employment agreements entered into between us and executive or non-executive employees supersede the provisions of the Severance Plan. As of December 31, 2017, all our executive officers have employment agreements with provisions that may provide greater severance benefits than those in the Severance Plan.

8. STOCKHOLDERS' EQUITY

Sales Agreement

On August 28, 2015, we entered into an At Market Issuance Sales Agreement, or the 2015 Sales Agreement, with MLV & Co. LLC, or MLV, pursuant to which we may elect to issue and sell shares of our common stock having an aggregate offering price of up to $50,000,000 from time to time into the open market at prevailing prices through MLV as our sales agent. We will pay MLV an aggregate commission rate equal to up to 3.0% of the gross proceeds of the sales price per share for common stock sold through MLV under the 2015 Sales Agreement. Pursuant to the 2015 Sales Agreement, sales of common stock will be made in such quantities and on such minimum price terms as we may set from time to time. We are not obligated to make any sales of common stock under the 2015 Sales Agreement. In December 2017, we sold an aggregate of 614,230 shares of our common stock pursuant to the 2015 Sales Agreement, resulting in net cash proceeds of approximately $1,060,000 after deducting sales commissions and offering expenses payable by us. The 2015 Sales Agreement will expire in August 2018 unless extended by the parties.

Warrants

In connection with each disbursement under a previous loan agreement with the California Institute for Regenerative Medicine, or CIRM, we were obligated to issue to CIRM a warrant to purchase Geron common stock. Such warrants and the underlying common stock were unregistered. We have no further obligations to issue any additional warrants to CIRM. As of December 31, 2017, a warrant to purchase 537,893 shares of our common stock remained outstanding. The warrant was issued to CIRM in August 2011 at an exercise price of $3.98 per share and expires in August 2021.

On March 31, 2015, a warrant to purchase 235,000 shares of our common stock was exercised at an exercise price of $3.75 per share. We received cash proceeds of approximately $881,000 from the exercise of this warrant.

8. STOCKHOLDERS' EQUITY (Continued)

Equity Plans

2002 Equity Incentive Plan

The 2002 Equity Incentive Plan, or 2002 Plan, expired in May 2012. Upon the adoption of the 2011 Incentive Award Plan in May 2011 (see below), no further grants of options or stock purchase rights were made from the 2002 Plan. Options granted under the 2002 Plan expire no later than ten years from the date of grant. Option exercise prices were equal to 100% of the fair market value of the underlying common stock on the date of grant. Service-based stock options under the 2002 Plan generally vested over a period of four years from the date of the option grant. Other stock awards (restricted stock awards and restricted stock units) had variable vesting schedules which were determined by our board of directors on the date of grant. All outstanding awards granted under the 2002 Plan remain subject to the terms of the 2002 Plan and the individual award agreements thereunder.

2011 Incentive Award Plan

In May 2011, our stockholders approved the adoption of the 2011 Incentive Award Plan, or 2011 Plan. Our board of directors administers the 2011 Plan. The 2011 Plan provides for grants of either incentive stock options or nonstatutory stock options and stock purchase rights to employees (including officers and employee directors) and consultants (including non-employee directors). As of December 31, 2017, an aggregate of 6,202,727 shares of our common stock were available for future grants of equity awards under the 2011 Plan. Pursuant to the terms of the 2011 Plan, any shares subject to outstanding stock options or outstanding unvested restricted stock awards originally granted under the 2002 Plan that expire or terminate for any reason prior to exercise or settlement or are forfeited because of the failure to meet a contingency or condition required to vest such shares shall become available for issuance under the 2011 Plan. Options granted under the 2011 Plan expire no later than ten years from the date of grant. Option exercise prices shall be equal to the fair market value of the underlying common stock on the date of grant. If, at the time we grant an option, the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all classes of our stock, the option exercise price shall be at least 110% of the fair market value of the underlying common stock and shall not be exercisable more than five years after the date of grant.

We grant service-based stock options to employees under our 2011 Plan that generally vest over a period of four years from the date of the option grant. Other stock awards (restricted stock awards and restricted stock units) have variable vesting schedules as determined by our board of directors on the date of grant.

Under certain circumstances, options may be exercised prior to vesting, subject to our right to repurchase shares subject to such option at the exercise price paid per share. Our repurchase rights would generally terminate on a vesting schedule identical to the vesting schedule of the exercised option. During 2017, we have not repurchased any shares under the 2011 Plan. As of December 31, 2017, we have no shares outstanding subject to repurchase.

As of December 31, 2017, our Non-Employee Director Compensation Policy adopted by our board of directors in March 2014 and amended by our board of directors in February 2015, May 2015 and February 2016 provides for the automatic grant to non-employee directors of the following types of equity awards under the 2011 Plan:

First Director Option. Each person who becomes a non-employee director, whether by election by our stockholders or by appointment by our board of directors to fill a vacancy, will automatically be granted an option to purchase 100,000 shares of common stock, or First Director Option, on the date such person first becomes a non-employee director. The First Director Option vests annually over three years upon each anniversary date of appointment to our board of directors.

Subsequent Director Option. Each non-employee director (other than any director receiving a First Director Option on the date of the annual meeting) will automatically be granted a subsequent option to purchase 50,000 shares of common stock, a Subsequent Director Option, on the date of the annual meeting of stockholders in each year during such director's service on our board of directors. The Subsequent Director Option vests in full on the earlier of: (i) the date of the next annual meeting of our stockholders or (ii) the first anniversary of the date of grant.

8. STOCKHOLDERS' EQUITY (Continued)

2006 Directors' Stock Option Plan

The 2006 Directors' Stock Option Plan, or 2006 Directors Plan, was terminated by our board of directors and replaced by the 2011 Plan in March 2014. No further grants of options were made from the 2006 Directors Plan upon the 2006 Directors Plan's termination. All outstanding awards granted under the 2006 Directors Plan remain subject to the terms of the 2006 Directors Plan and the individual award agreements made thereunder.

The options granted to non-employee directors under the 2006 Directors Plan were nonstatutory stock options, and they expire no later than ten years from the date of grant. The option exercise price was equal to the fair market value of the underlying common stock on the date of grant. The First Director Option granted to non-employee directors under the 2006 Directors Plan vested annually over three years upon each anniversary date of appointment to the board of directors. The Subsequent Director Option granted to non-employee directors on the date of the annual meeting of stockholders in each year during such director's service on our board of directors under the 2006 Directors Plan vested one year from the date of grant.

Aggregate option and award activity for the 2002 Plan, 2011 Plan and 2006 Directors Plan is as follows:

		Outstanding Options			
	Shares Available For Grant	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value (In thousands)
Balance at December 31, 2016	9,570,535	19,125,287	$3.15		
Options granted	(3,484,000)	3,484,000	$2.19		
Awards granted	(72,066)	—	$ —		
Options exercised	—	(12,500)	$1.41		
Options cancelled/forfeited	188,258	(188,258)	$7.99		
Balance at December 31, 2017	6,202,727	22,408,529	$2.96	6.24	$2,034
Options exercisable at December 31, 2017		17,249,032	$3.03	5.57	$2,034
Options fully vested and expected to vest at December 31, 2017		22,171,142	$2.96	6.21	$2,034

The aggregate intrinsic value in the preceding table represents the total intrinsic value, based on Geron's closing stock price of $1.80 per share as of December 29, 2017, which would have been received by the option holders had all the option holders exercised their options as of that date.

We have not granted any options with an exercise price below or greater than the fair market value of our common stock on the date of grant in 2017, 2016 or 2015. As of December 31, 2017, 2016 and 2015, there were 17,249,032, 14,074,457 and 11,356,232 exercisable options outstanding at weighted average exercise prices per share of $3.03, $2.99 and $2.98, respectively.

The total pretax intrinsic value of stock options exercised during 2017, 2016 and 2015 was $15,000, $595,000 and $2,398,000, respectively. Cash received from the exercise of options in 2017, 2016 and 2015 totaled approximately $18,000, $493,000 and $2,205,000, respectively.

8. STOCKHOLDERS' EQUITY (Continued)

Information about stock options outstanding as of December 31, 2017 is as follows:

	Options Outstanding		
Exercise Price Range	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)
$1.10 - $1.51	5,655,662	$1.45	4.89
$1.55 - $2.16	5,631,031	$2.08	7.04
$2.22 - $4.34	6,000,783	$3.37	7.60
$4.42 - $7.31	5,121,053	$5.10	5.27
$1.10 - $7.31	22,408,529	$2.96	6.24

Aggregate restricted stock activity for the 2011 Plan is as follows:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Contractual Term (In years)
Non-vested restricted stock at December 31, 2016	—	$ —	—
Granted	72,066	$2.20	
Vested	(72,066)	$2.20	
Non-vested restricted stock at December 31, 2017	—	$ —	—

The weighted average grant date fair value of restricted stock granted during the years ended December 31, 2017, 2016 and 2015 was $2.20, $2.44 and $3.75 per share, respectively. The total fair value of restricted stock that vested during 2017, 2016 and 2015 was $159,000, $54,000 and $275,000, respectively.

Employee Stock Purchase Plan

In March 2014, our board of directors adopted the 2014 Employee Stock Purchase Plan, or 2014 Purchase Plan. The 2014 Purchase Plan was approved by our stockholders in May 2014. The 2014 Purchase Plan replaced the 1996 Employee Stock Purchase Plan, or 1996 Purchase Plan, which was terminated effective as of the date the 2014 Purchase Plan was approved by our stockholders. Under the 2014 Purchase Plan, we are authorized to sell to eligible employees up to an aggregate of 1,000,000 shares of Geron common stock. As of December 31, 2017, an aggregate of 104,692 shares of our common stock have been issued under the 2014 Purchase Plan since its adoption.

The 2014 Purchase Plan is comprised of a series of offering periods, each with a maximum duration (not to exceed 12 months) with new offering periods commencing on January 1st and July 1st of each year. The date an employee enters the offering period will be designated as the entry date for purposes of that offering period. An employee may participate only in one offering period at a time. Each offering period consists of two consecutive purchase periods of six months' duration, with the last day of such period designated a purchase date.

Under the terms of the 2014 Purchase Plan, employees can choose to have up to 10% of their annual salary withheld to purchase our common stock. An employee may not make additional payments into such account or increase the withholding percentage during the offering period.

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

8. STOCKHOLDERS' EQUITY (Continued)

Stock-Based Compensation for Employees and Directors

We measure and recognize compensation expense for all share-based payment awards made to employees and directors, including employee stock options, restricted stock awards and employee stock purchases, based on grant-date fair values for these instruments. We use the Black Scholes option-pricing model to estimate the grant-date fair value of our stock options and employee stock purchases. The fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant.

As stock-based compensation expense recognized in the statements of operations for the years ended December 31, 2017, 2016 and 2015 is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures but at a minimum, reflects the grant-date fair value of those awards that actually vested in the period. Forfeitures have been estimated at the time of grant based on historical data and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. With the adoption of Accounting Standards Update No. 2016-09, *Improvements to Employee Share Based Payment Accounting*, or ASU 2016-09, in the first quarter of 2017, we elected to continue to estimate forfeitures expected to occur to determine the amount of stock-based compensation expense to be recognized in each period. The adoption of ASU 2016-09 did not impact our accounting for or presentation of excess tax benefits recognized on stock-based compensation expense on our financial statements since our net deferred tax assets are fully offset by a valuation allowance due to our history of operating losses. In addition, presentation requirements for cash flows related to employee taxes paid for withheld shares had no impact to all periods presented.

We recognize stock-based compensation expense on a straight-line basis over the requisite service period, which is generally the vesting period. The following table summarizes the stock-based compensation expense related to stock options, restricted stock awards and employee stock purchases for the years ended December 31, 2017, 2016 and 2015 which was allocated as follows:

	Year Ended December 31,		
(In thousands)	2017	2016	2015
Research and development	$ 988	$ 1,275	$ 2,139
Restructuring charges	—	—	307
General and administrative	7,156	6,970	5,951
Stock-based compensation expense included in operating expenses	$ 8,144	$ 8,245	$ 8,397

Stock-based compensation expense also has been recognized for the modification of the post-termination exercise period for certain stock options previously granted to employees affected by the March 2015 restructuring, which has been included in restructuring charges in our statements of operations. See Note 6 on Restructuring for further discussion of the restructuring.

The fair value of stock options granted in 2017, 2016 and 2015 has been estimated at the date of grant using the Black Scholes option-pricing model with the following assumptions:

	Year Ended December 31,		
	2017	2016	2015
Dividend yield	0%	0%	0%
Expected volatility range	0.884 to 0.892	0.888 to 0.890	0.874 to 0.884
Risk-free interest rate range	1.98% to 1.99%	1.21% to 1.38%	1.68% to 1.71%
Expected term	5.5 yrs	5.5 yrs	5.5 yrs

8. STOCKHOLDERS' EQUITY (Continued)

The fair value of employee stock purchases in 2017, 2016 and 2015 has been estimated using the Black Scholes option-pricing model with the following assumptions:

	Year Ended December 31,		
	2017	2016	2015
Dividend yield	0%	0%	0%
Expected volatility range	0.577 to 0.641	0.641 to 0.684	0.654 to 1.392
Risk-free interest rate range	0.45% to 0.89%	0.28% to 0.45%	0.11% to 0.28%
Expected term range	6 - 12 mos	6 - 12 mos	6 - 12 mos

Dividend yield is based on historical cash dividend payments and Geron has paid no cash dividends to date. The expected volatility range is based on historical volatilities of our stock since traded options on Geron common stock do not correspond to option terms and the trading volume of options is limited. The risk-free interest rate range is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the date of grant for an award. The expected term of options is derived from actual historical exercise and post-vesting cancellation data and represents the period of time that options granted are expected to be outstanding. The expected term of employees' purchase rights is equal to the purchase period.

Based on the Black Scholes option-pricing model, the weighted average estimated fair value of stock options granted during the years ended December 31, 2017, 2016 and 2015 was $1.58, $1.83 and $3.06 per share, respectively. The weighted average estimated fair value of employees' purchase rights for the years ended December 31, 2017, 2016 and 2015 was $0.75, $1.01 and $1.64 per share, respectively. As of December 31, 2017, total compensation cost related to unvested share-based payment awards not yet recognized, net of estimated forfeitures, was $8,008,000, which is expected to be recognized over the next 26 months on a weighted-average basis.

401(k) Plan Matching Contributions

We sponsor a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code covering all full-time U.S. employees, or the Geron 401K Plan. Participating employees may contribute up to the annual Internal Revenue Service contribution limit. The Geron 401K Plan also permits us to provide discretionary matching and profit sharing contributions. Prior to 2014, our board of directors approved matching contributions for the Geron 401K Plan in our common stock, which vested ratably over four years for each year of service completed by our employees, commencing from the date of hire.

Stock-Based Compensation to Service Providers

We grant stock options and restricted stock awards to consultants from time to time in exchange for services performed for us. In general, the stock options and restricted stock awards vest over the contractual period of the consulting arrangement. The fair value of stock options and restricted stock awards held by consultants is recorded as operating expenses over the vesting term of the respective equity awards. In addition, we will record any increase in the fair value of the stock options and restricted stock awards as the respective equity award vests. We recorded stock-based compensation expense of $41,000, $104,000 and $311,000 for the vested portion of the fair value of stock options and restricted stock awards held by consultants in 2017, 2016 and 2015, respectively.

We have also issued common stock to non-employee directors and consultants. For stock issuances where services are to be performed for us, we record a prepaid asset equal to the fair market value of the shares on the date of issuance and amortize the fair value of the shares to our operating expenses on a pro-rata basis as services are performed. For stock issuances where services have been performed for us, we record the fair market value of the shares on the date of issuance to offset the amounts owed. In 2017, 2016 and 2015, we issued 72,066, 21,541 and 18,077 shares of common stock, respectively, in exchange for services provided. In 2017, 2016 and 2015, we recognized approximately $159,000, $52,000 and $53,000, respectively, of expense in connection with stock grants to non-employee directors and consultants.

8. STOCKHOLDERS' EQUITY (Continued)

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance as of December 31, 2017 is as follows:

Outstanding stock options	22,408,529
Options and awards available for grant	6,202,727
Employee stock purchase plan	895,308
Warrant outstanding	537,893
Total	30,044,457

9. INCOME TAXES

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

	December 31,	
	2017	2016
	(In thousands)	
Net operating loss carryforwards	$ 187,700	$ 280,400
Research credits	34,300	29,800
Capitalized research and development	2,500	300
License fees	100	200
Other-net	8,200	11,500
Total deferred tax assets	232,800	322,200
Valuation allowance for deferred tax assets	(232,800)	(322,200)
Net deferred tax assets	$ —	$ —

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial performance. Forming a conclusion that a valuation allowance is not required is difficult when there is negative evidence such as cumulative losses in recent years. Because of our history of losses, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance decreased by $89,400,000 and $2,300,000 for the years ended December 31, 2017 and 2015, respectively, and increased by $9,600,000 during the year ended December 31, 2016. No income tax benefit was realized from stock options exercised in 2017.

As of December 31, 2017, we had domestic federal net operating loss carryforwards of approximately $793,900,000 expiring at various dates beginning in 2018 through 2037 and state net operating loss carryforwards of approximately $300,200,000 expiring at various dates beginning in 2017 through 2037, if not utilized. We also had federal research and development tax credit carryforwards of approximately $34,000,000 expiring at various dates beginning in 2018 through 2037, if not utilized. Our state research and development tax credit carryforwards of approximately $19,100,000 carry forward indefinitely.

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

9. INCOME TAXES (Continued)

On December 22, 2017, the Tax Cuts and Jobs Act of 2017, or 2017 Tax Act, was signed into law. Among other things, the 2017 Tax Act permanently lowers the corporate federal income tax rate to 21% from the existing maximum rate of 35%, effective for tax years including or commencing January 1, 2018. In accordance with GAAP, we remeasured the carrying value of our deferred tax assets as of December 31, 2017 using the new enacted corporate federal income tax rate of 21%. This remeasurement reduced our aggregate deferred tax assets and correspondingly reduced the valuation allowance by approximately $102,300,000. The remeasurement did not impact our financial statements.

In accordance with Staff Accounting Bulletin 118, as of December 31, 2017, we have made a reasonable estimate of the effects of the 2017 Tax Act on our existing deferred tax assets. Our preliminary estimate and the remeasurement of our deferred tax assets are subject to further analysis related to certain matters, such as developing interpretations of the provisions of the 2017 Tax Act, changes to certain estimates and the filing of our tax returns. U.S. Treasury regulations, administrative interpretations or court decisions interpreting the 2017 Tax Act may require further adjustments and changes in our estimates. The final determination of the 2017 Tax Act and the remeasurement of our deferred assets will be completed as additional information becomes available, but we expect no later than one year from the enactment of the 2017 Tax Act.

We adopted the provision of the standard for accounting for uncertainties in income taxes on January 1, 2007. Upon adoption, we recognized no material adjustment in the liability for unrecognized tax benefits. At December 31, 2017, we had approximately $15,900,000 of unrecognized tax benefits, none of which would currently affect our effective tax rate if recognized due to our deferred tax assets being fully offset by a valuation allowance.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows (in thousands):

Balance as of December 31, 2016	$ 14,700
Increase related to current year tax positions	1,200
Balance as of December 31, 2017	$ 15,900

If applicable, we would classify interest and penalties related to uncertain tax positions in income tax expense. Through December 31, 2017, there has been no interest expense or penalties related to unrecognized tax benefits.

We do not currently expect any significant changes to unrecognized tax benefits during the fiscal year ended December 31, 2018. In certain cases, our uncertain tax positions are related to tax years that remain subject to examination by the relevant tax authorities. Tax years for which we have carryforward net operating loss and credit attributes remain subject to examination by federal and most state tax authorities.

10. STATEMENTS OF CASH FLOWS DATA

	Year Ended December 31,		
	2017	2016	2015
		(In thousands)	
Supplemental investing activities:			
Net unrealized (loss) gain on marketable securities	$ (154)	$ 160	$ (129)

We have not made any cash payments for taxes or interest for the years ended December 31, 2017, 2016 and 2015.

11. SELECTED QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share amounts)			
Year Ended December 31, 2017:				
Revenues	$ 537	$ 174	$ 163	$ 191
Operating expenses	8,031	6,905	7,407	7,977
Net loss	(7,183)	(6,405)	(6,899)	(7,429)
Basic and diluted net loss per share	$ (0.05)	$ (0.04)	$ (0.04)	$ (0.05)
Year Ended December 31, 2016:				
Revenues[(1)]	$ 749	$ 211	$ 5,108	$ 94
Operating expenses	9,826	9,122	8,985	8,875
Net loss	(8,842)	(8,637)	(3,576)	(8,482)
Basic and diluted net loss per share	$ (0.06)	$ (0.05)	$ (0.02)	$ (0.05)

(1) The third quarter of 2016 includes the full recognition of the $5,000,000 upfront payment from Janssen Pharmaceuticals as license fee revenue. See Note 4 on License Agreements.

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

12. SUBSEQUENT EVENT

In January 2018, we sold an aggregate of 776,788 shares of our common stock pursuant to the 2015 Sales Agreement with MLV, resulting in net cash proceeds of approximately $1,553,000 after deducting sales commissions and offering expenses payable by us. For further discussion of the 2015 Sales Agreement, see Note 8 on Stockholders' Equity.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

(I) Evaluation of Disclosure Controls and Procedures

We have carried out an evaluation under the supervision and with the participation of management, including our Chief Executive Officer and our Chief Financial Officer, of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this annual report on Form 10-K. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2017.

In designing and evaluating disclosure controls and procedures, our management recognizes that any system of controls, however well designed and operated, can provide only reasonable assurance, and not absolute assurance, that the desired control objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals in all future circumstances. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met and, as set forth above, our Chief Executive Officer and our Chief Financial Officer have concluded, based on their evaluation as of the end of the period covered by this annual report on Form 10-K, that our disclosure controls and procedures were effective to provide reasonable assurance that the objectives of our disclosure control system were met.

(II) Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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

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

(1) Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;

(2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

(3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

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

Under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework set forth in "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on our evaluation under the framework set forth in "Internal Control—Integrated Framework," our management concluded that our internal control over financial reporting was effective as of December 31, 2017. The effectiveness of our internal control over financial reporting as of December 31, 2017 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included herein.

(IV) Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Geron Corporation

Opinion on Internal Control over Financial Reporting

We have audited Geron Corporation's internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Geron Corporation (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the balance sheets of the Company as of December 31, 2017 and 2016, the related statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes and our report dated March 16, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

Redwood City, California
March 16, 2018

ITEM 9B. OTHER INFORMATION

None.

PART III

Certain information required by Part III is omitted from this annual report on Form 10-K because we will file with the U.S. Securities and Exchange Commission a definitive proxy statement pursuant to Regulation 14A in connection with the solicitation of proxies for Geron's Annual Meeting of Stockholders expected to be held in May 2018, or the Proxy Statement, not later than 120 days after the end of the fiscal year covered by this annual report on Form 10-K, and certain information included therein is incorporated herein by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Identification of Directors and Nominees for Director

The information required by this item concerning our directors and nominees for director is incorporated by reference from the section captioned "Proposal 1: Election of Directors" contained in our Proxy Statement.

Identification of Executive Officers

The information required by this item concerning our executive officers is set forth in Part I, Item 1 of this annual report on Form 10-K.

Code of Ethics

We have adopted a Code of Conduct with which every person who works for Geron, including our board of directors, is expected to comply. The Code of Conduct is publicly available on our website under the Investor Relations section at www.geron.com. This website address is intended to be an inactive, textual reference only; none of the material on this website is part of this annual report on Form 10-K. If any substantive amendments are made to the Code of Conduct or any waiver granted, including any implicit waiver, from a provision of the Code to our Chief Executive Officer, Chief Financial Officer or Corporate Controller, we will disclose the nature of such amendment or waiver on that website or in a report on Form 8-K.

Copies of the Code of Conduct will be furnished without charge to any person who submits a written request directed to the attention of our Corporate Secretary, at our offices located at 149 Commonwealth Drive, Suite 2070, Menlo Park, California, 94025.

Section 16(a) Compliance

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

Certain Corporate Governance Matters

The information required by this item concerning our audit committee, audit committee financial expert and procedures by which stockholders may recommend nominees to our board of directors, may be found under the sections captioned "Board Leadership and Governance" and "Other Matters" contained in the Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference from the sections captioned "Compensation Discussion and Analysis," "Compensation Committee Report," "Executive Compensation Tables and Related Narrative Disclosure," "Compensation of Directors" and "Compensation Committee Interlocks and Insider Participation" contained in the Proxy Statement.

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

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

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

The information required by this item is incorporated by reference from the sections captioned "Proposal 1: Election of Directors" and "Certain Transactions" contained in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

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

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) Financial Statements

Included in Part II, Item 8 of this Report:

(2) Financial Statement Schedules

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

(3) Exhibits

		Incorporation by Reference			
Exhibit Number	Description	Exhibit Number	Filing	Filing Date	File No.
2.1	Asset Contribution Agreement by and among Geron Corporation, BioTime, Inc. and Asterias Biotherapeutics, Inc. (formerly known as BioTime Acquisition Corporation)	2.1	8-K	January 8, 2013	000-20859
3.1	Restated Certificate of Incorporation	3.3	8-K	May 18, 2012	000-20859
3.2	Certificate of Amendment of the Restated Certificate of Incorporation	3.1	8-K	May 18, 2012	000-20859
3.3	Amended and Restated Bylaws of Registrant	3.1	8-K	March 19, 2010	000-20859
3.4	Amendment to Amended and Restated Bylaws of Registrant	3.4	8-K	November 22, 2017	000-20859
4.1	Form of Common Stock Certificate	4.1	10-K	March 15, 2013	000-20859
4.2	Form of 2011 Warrant	Attachment to 10.1	10-Q	November 3, 2011	000-20859
10.1	Form of Indemnification Agreement	10.1	10-K	March 7, 2012	000-20859
10.2	Amended and Restated 2002 Equity Incentive Plan*	4.1	S-8	June 4, 2010	333-167349
10.3	Form of Stock Option Agreement under 2002 Equity Incentive Plan*	10.6	10-K	March 15, 2013	000-20859
10.4	Amended and Restated 2006 Directors' Stock Option Plan*	10.5	10-Q	November 7, 2013	000-20859
10.5	2011 Incentive Award Plan*	10.1	8-K	May 16, 2011	000-20859
10.6	Form of Stock Option Agreement under 2011 Incentive Award Plan*	10.11	10-K	March 15, 2013	000-20859
10.7	Form of Restricted Stock Award Agreement under 2011 Incentive Award Plan*	10.12	10-K	March 15, 2013	000-20859

		Incorporation by Reference			
Exhibit Number	Description	Exhibit Number	Filing	Filing Date	File No.
10.8	Form of Non-Employee Director Stock Option Agreement under 2011 Incentive Award Plan*	10.2	10-Q	May 7, 2015	000-20859
10.9	2014 Employee Stock Purchase Plan*	10.1	8-K	May 23, 2014	000-20859
10.10	Amended and Restated Severance Plan, effective as of May 23, 2013*	10.1	8-K	May 24, 2013	000-20859
10.11	Employment agreement between the Registrant and John A. Scarlett, M.D., effective as of September 29, 2011*	10.2	10-Q	November 3, 2011	000-20859
10.12	First Amendment to Employment Agreement between the Registrant and John A. Scarlett, M.D., effective as of February 11, 2014*	10.5	8-K	February 14, 2014	000-20859
10.13	Second Amendment to Employment Agreement between the Registrant and John A. Scarlett, M.D., effective as of January 31, 2018*	10.1	8-K	February 2, 2018	000-20859
10.14	Employment agreement between the Registrant and Stephen N. Rosenfield, effective as of February 16, 2012*	10.32	10-K	March 7, 2012	000-20859
10.15	First Amendment to Employment Agreement between the Registrant and Stephen N. Rosenfield, effective as of September 24, 2013*	10.4	8-K	September 27, 2013	000-20859
10.16	Employment agreement between the Registrant and Andrew J. Grethlein, effective as of September 17, 2012*	10.2	10-Q	November 2, 2012	000-20859
10.17	First Amendment to Employment Agreement between the Registrant and Andrew J. Grethlein, effective as of February 11, 2014*	10.4	8-K	February 14, 2014	000-20859
10.18	Employment agreement between the Registrant and Olivia K. Bloom, effective as of December 7, 2012*	10.26	10-K	March 15, 2013	000-20859
10.19	First Amendment to Employment Agreement between the Registrant and Olivia K. Bloom, effective as of September 24, 2013*	10.2	8-K	September 27, 2013	000-20859
10.20	Second Amendment to Employment Agreement between the Registrant and Olivia K. Bloom, effective as of February 11, 2014*	10.1	8-K	February 14, 2014	000-20859
10.21	Employment agreement between the Registrant and Melissa A. Kelly Behrs, effective as of January 31, 2013*	10.28	10-K	March 15, 2013	000-20859
10.22	First Amendment to Employment Agreement between the Registrant and Melissa A. Kelly Behrs, effective as of September 24, 2013*	10.1	8-K	September 27, 2013	000-20859

		Incorporation by Reference			
Exhibit Number	Description	Exhibit Number	Filing	Filing Date	File No.
10.23	Second Amendment to Employment Agreement between the Registrant and Melissa A. Kelly Behrs, effective as of February 11, 2014*	10.2	8-K	February 14, 2014	000-20859
10.24†	California Institute for Regenerative Medicine Notice of Loan Award	10.1	10-Q	November 3, 2011	000-20859
10.25†	Office Lease Agreement by and between the Registrant and Exponent Realty, LLC, effective as of February 29, 2012	10.36	10-K/A	March 27, 2012	000-20859
10.26	Fifth Amendment to Office Lease Agreement by and between the Registrant and Exponent Realty, LLC, effective as of September 15, 2015	10.1	8-K	September 18, 2015	000-20859
10.27	Sixth Amendment to Office Lease Agreement by and between the Registrant and Exponent Realty, LLC, effective as of September 21, 2017	10.1	8-K	September 22, 2017	000-20859
10.28	At Market Issuance Sales Agreement, dated August 28, 2015, by and between the Registrant and MLV & Co. LLC	10.1	8-K	August 28, 2015	000-20859
10.29†	Collaboration and License Agreement by and between the Registrant and Janssen Biotech, Inc., dated November 13, 2014	10.36	10-K	March 11, 2015	000-20859
10.30	Non-Employee Director Compensation Policy, as amended February 11, 2016*	10.30	10-K	March 10, 2016	000-20859
10.31	Non-Employee Director Compensation Policy, as amended January 31, 2018*				
12.1	Computation of Ratio of Earnings to Fixed Charges				
23.1	Consent of Independent Registered Public Accounting Firm				
24.1	Power of Attorney (see signature page)				
31.1	Certification of Chief Executive Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002, dated March 16, 2018				
31.2	Certification of Chief Financial Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002, dated March 16, 2018				
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated March 16, 2018**				

		Incorporation by Reference			
Exhibit Number	Description	Exhibit Number	Filing	Filing Date	File No.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated March 16, 2018**				
101	The following materials from the Registrant's annual report on Form 10-K for the year ended December 31, 2017, formatted in Extensible Business Reporting Language (XBRL) include: (i) Balance Sheets as of December 31, 2017 and 2016, (ii) Statements of Operations, Comprehensive Loss, Stockholders' Equity and Cash Flows for each of the three years in the period ended December 31, 2017, and (iii) Notes to Financial Statements				

† Confidential treatment has been granted for certain portions of this exhibit. Omitted information has been filed separately with the Securities and Exchange Commission.

* Management contract or compensation plan or arrangement.

** The certifications attached as Exhibits 32.1 and 32.2 that accompany this annual report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

GERON CORPORATION

Date: March 16, 2018

By: /s/ OLIVIA K. BLOOM
OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

POWER OF ATTORNEY

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

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

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

Signature	Title	Date
/s/ JOHN A. SCARLETT JOHN A. SCARLETT	President, Chief Executive Officer and Director (Principal Executive Officer)	March 16, 2018
/s/ OLIVIA K. BLOOM OLIVIA K. BLOOM	Executive Vice President, Finance, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	March 16, 2018
/s/ DANIEL M. BRADBURY DANIEL M. BRADBURY	Director	March 16, 2018
/s/ KARIN EASTHAM KARIN EASTHAM	Director	March 16, 2018
/s/ HOYOUNG HUH HOYOUNG HUH	Director	March 16, 2018
/s/ V. BRYAN LAWLIS V. BRYAN LAWLIS	Director	March 16, 2018
/s/ SUSAN M. MOLINEAUX SUSAN M. MOLINEAUX	Director	March 16, 2018
/s/ ROBERT J. SPIEGEL ROBERT J. SPIEGEL	Director	March 16, 2018

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

1) Registration Statement (Form S-3, No. 333-206659) and in the related prospectuses and prospectus supplements,

2) Registration Statement (Form S-3, No. 333-171611) and in the related prospectuses and prospectus supplements,

3) Registration Statement (Form S-8, No. 333-174350) pertaining to the 2011 Incentive Award Plan, the 2002 Equity Incentive Plan, the 1996 Directors' Stock Option Plan and the 1992 Stock Option Plan,

4) Registration Statements (Forms S-8, No. 333-167349 and No. 333-161035) pertaining to the 2002 Equity Incentive Plan,

5) Registration Statement (Form S-8, No. 333-136330) pertaining to the 2002 Equity Incentive Plan and the 2006 Directors' Stock Option Plan, and

6) Registration Statement (Form S-8, No. 333-196677) pertaining to the 2014 Employee Stock Purchase Plan;

of our reports dated March 16, 2018, with respect to the financial statements of Geron Corporation and the effectiveness of internal control over financial reporting of Geron Corporation included in this Annual Report (Form 10-K) for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Redwood City, California
March 16, 2018

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
FORM OF RULE 13A-14(A)
AS ADOPTED PURSUANT TO
SECTION 302(A) OF THE SARBANES-OXLEY ACT OF 2002

I, John A. Scarlett, M.D., certify that:

1. I have reviewed this annual report on Form 10-K of Geron Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 16, 2018

/s/ JOHN A. SCARLETT
JOHN A. SCARLETT, M.D.
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
FORM OF RULE 13A-14(A)
AS ADOPTED PURSUANT TO
SECTION 302(A) OF THE SARBANES-OXLEY ACT OF 2002

I, Olivia K. Bloom, certify that:

1. I have reviewed this annual report on Form 10-K of Geron Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 16, 2018

/s/ OLIVIA K. BLOOM
OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Geron Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the accompanying annual report on Form 10-K of the Company for the year ended December 31, 2017 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 16, 2018

/s/ JOHN A. SCARLETT
JOHN A. SCARLETT, M.D.
President and Chief Executive Officer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Geron Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the accompanying annual report on Form 10-K of the Company for the year ended December 31, 2017 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 16, 2018

/s/ OLIVIA K. BLOOM
OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

GERON CORPORATION

149 Commonwealth Drive, Suite 2070
Menlo Park, CA 94025

March 30, 2018

Dear Geron Stockholder:

You are cordially invited to attend the 2018 Annual Meeting of Stockholders of Geron Corporation to be held on Tuesday, May 15, 2018, at 4:00 p.m., Pacific Daylight Time, at Geron Corporation's offices located at 149 Commonwealth Drive, Menlo Park, California 94025. In addition, we will be hosting the meeting via conference call which can be accessed via telephone by dialing 877-303-9139 (U.S.); 760-536-5195 (international). The passcode is 68816558. A live audio-only webcast will also be available at http://edge.media-server.com/m/p/h9gt9885.

As permitted by the rules of the Securities and Exchange Commission, we are pleased to furnish our proxy materials to stockholders primarily over the Internet. Consequently, most stockholders will receive a notice with instructions for accessing proxy materials and voting via the Internet, instead of paper copies of proxy materials. However, this notice will provide information on how stockholders may obtain paper copies of proxy materials if they choose. Stockholders who continue to receive hard copies of proxy materials may help us reduce costs by opting to receive future proxy materials by e-mail.

At this year's Annual Meeting, the agenda includes the following items:

- election of directors;
- advisory vote to approve named executive officer compensation;
- approval of the Geron Corporation 2018 Equity Incentive Plan; and
- ratification of Ernst & Young LLP as our independent registered public accounting firm.

Your vote is important to us. Whether or not you plan to attend the meeting, please vote electronically via the Internet or by telephone, or, if you requested paper copies of the proxy materials, please complete, sign, date and return the accompanying proxy card in the enclosed postage-paid envelope, as promptly as possible. If you attend the Annual Meeting, you will have the right to vote your shares in person.

Thank you for your ongoing support of, and continued interest in, Geron Corporation.

Sincerely,

John A. Scarlett, M.D.
President and Chief Executive Officer

GERON CORPORATION
149 Commonwealth Drive, Suite 2070
Menlo Park, CA 94025

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To Be Held on May 15, 2018

To the Stockholders of Geron Corporation:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Stockholders (the "Annual Meeting") of GERON CORPORATION, a Delaware corporation (the "Company"), will be held on May 15, 2018, at 4:00 p.m., Pacific Daylight Time, at the Company's offices located at 149 Commonwealth Drive, Menlo Park, California 94025. Stockholders may also access the meeting via telephone by dialing 877-303-9139 (U.S.); 760-536-5195 (international). The passcode is 68816558. A live audio-only webcast will also be available at http://edge.media-server.com/m/p/h9gt9885. The meeting will be held for the following purposes:

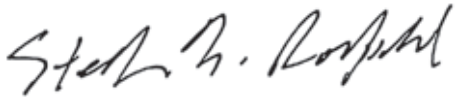
1. To elect the two nominees for director named in the accompanying proxy statement (the "Proxy Statement") to hold office as Class I members of the Board of Directors until the 2021 annual meeting of stockholders;
2. To approve, on an advisory basis, the compensation of the Company's named executive officers, as disclosed in the Proxy Statement;
3. To approve the Geron Corporation 2018 Equity Incentive Plan;
4. To ratify the selection by the Audit Committee of the Board of Directors of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2018; and
5. To transact such other business as may properly come before the Annual Meeting or any postponement or adjournment thereof.

The foregoing items of business are more fully described in the Proxy Statement accompanying this Notice.

The Board of Directors has fixed the close of business on March 19, 2018, as the record date for the determination of stockholders entitled to notice of and to vote at the Annual Meeting and at any adjournment or postponement thereof. Each stockholder is entitled to one vote for each share of common stock held at that time.

Your Vote Is Important To Us. Whether or not you plan to attend the meeting, please vote electronically via the Internet or by telephone, or, if you requested paper copies of the proxy materials, please complete, sign, date and return the accompanying proxy card in the enclosed postage-paid envelope, as promptly as possible. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the meeting, you must obtain from the record holder a proxy issued in your name.

By Order of the Board of Directors,



Stephen N. Rosenfield
Executive Vice President, General Counsel and Corporate Secretary

Menlo Park, California
March 30, 2018

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting to Be Held on May 15, 2018:
Letter to Stockholders, Notice and 2018 Proxy Statement, and 2017 Annual Report on Form 10-K are available at www.proxyvote.com.

YOUR VOTE IS VERY IMPORTANT, REGARDLESS OF THE NUMBER OF SHARES YOU OWN. WHETHER OR NOT YOU EXPECT TO ATTEND THE MEETING, WE URGE YOU TO SUBMIT YOUR PROXY PROMPTLY IN ORDER TO ASSURE THAT A QUORUM IS PRESENT.

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GERON CORPORATION

149 Commonwealth Drive, Suite 2070
Menlo Park, CA 94025

PROXY STATEMENT
FOR THE ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON MAY 15, 2018

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING

Why am I receiving these materials?

You are receiving this annual meeting information and Proxy Statement from us because you owned shares of common stock of Geron Corporation, a Delaware corporation ("Geron," the "Company," "we" or "us"), as of March 19, 2018, the record date for our 2018 Annual Meeting of Stockholders (the "Annual Meeting"), to be held on May 15, 2018, at 4:00 p.m., Pacific Daylight Time, at the Company's offices located at 149 Commonwealth Drive, Menlo Park, California 94025, or at any adjournment or postponement thereof. The Geron Board of Directors (the "Board"), has made these materials available to you in connection with the Board's solicitation of proxies for use at the Annual Meeting. You may vote by proxy over the Internet or by phone, or by mail if you requested printed copies of the proxy materials.

As permitted by the rules of the Securities and Exchange Commission (the "SEC"), we are providing our stockholders access to proxy materials via the Internet. Accordingly, we are sending by mail only a Notice of Availability of Proxy Materials (the "Notice") to certain of our stockholders of record and posting our proxy materials online at www.proxyvote.com. Stockholders who previously requested to receive hard copies of proxy materials will receive a full set of proxy materials, instead of the Notice. We intend to distribute the Notice and the proxy materials on or about April 3, 2018 to all stockholders of record entitled to vote at the Annual Meeting.

What does it mean if I receive more than one set of proxy materials or more than one Notice, or combination thereof?

If you receive more than one set of proxy materials, or more than one Notice or a combination thereof, your shares may be registered in more than one name or may be registered in different accounts. Please follow the voting instructions on each set of proxy materials or Notices to ensure that all of your shares are voted.

Will I receive any proxy materials by mail other than the Notice?

No, you will not receive any other proxy materials by mail other than the Notice unless you request paper copies. This Proxy Statement and Geron's 2017 Annual Report on Form 10-K are available at www.proxyvote.com. You may request a full set of proxy materials be sent to your specified postal or email address as follows:

- by telephone: call 1-800-579-1639 free of charge and follow the instructions;
- by Internet: go to www.proxyvote.com and follow the instructions; or
- by e-mail: send an e-mail message to sendmaterial@proxyvote.com. Please send a blank e-mail and insert the 16-Digit Control Number located in your Notice in the subject line.

To sign up for electronic delivery of proxy materials, please follow the instructions provided with your proxy materials and on your proxy card or voting instruction card, to vote using the Internet and, when prompted, indicate that you agree to receive or access future stockholder communications electronically. Alternatively, you can go to www.proxyvote.com and enroll for online delivery of proxy materials. A stockholder's election to receive proxy materials by mail or electronically by email will remain in effect until the stockholder terminates such election.

What is the purpose of the Annual Meeting?

At our Annual Meeting, stockholders will act upon the matters described in this Proxy Statement. In addition, following the meeting, management will report on current events at Geron and respond to questions from stockholders.

How can I participate in the Annual Meeting?

All stockholders are cordially invited to attend the Annual Meeting in person at the Company's offices located at 149 Commonwealth Drive, Menlo Park, California 94025. For directions to attend the Annual Meeting, please contact our Investor Relations department at (650) 473-7765 or by email at investor@geron.com.

If you cannot attend the meeting in person, you may participate via telephone by dialing 877-303-9139 (U.S.); 760-536-5195 (international). The passcode is 68816558. We recommend that you dial in at least 10 minutes early to minimize any delay in joining the meeting. Participants joining via telephone will also have an opportunity to ask questions during the meeting.

The Annual Meeting will also be available via the Internet in a live audio-only webcast available at http://edge.media-server.com/m/p/h9gt9885. The audio webcast of the Annual Meeting will be available for replay approximately one hour following the live meeting through June 15, 2018. Since the webcast is audio-only, participants will be unable to ask questions in this forum.

Who can vote at the Annual Meeting?

Only holders of record at the close of business on March 19, 2018 (the "Record Date") will be entitled to notice of and to vote at the Annual Meeting or any adjournment or postponement thereof. At the close of business on the Record Date, we had 160,654,027 shares of common stock, par value $0.001 per share ("Common Stock"), outstanding. Each holder of record of Common Stock on the Record Date will be entitled to one vote for each share held on all matters to be voted upon at the Annual Meeting. The stock transfer books will not be closed between the Record Date and the Annual Meeting date. A list of stockholders entitled to vote at the Annual Meeting will be available for examination at our principal executive offices at the address listed above for a period of ten days prior to the Annual Meeting and during the Annual Meeting.

A quorum of stockholders is necessary to hold a valid meeting. In order to constitute a quorum and to transact business at the Annual Meeting, a majority of the outstanding shares of Common Stock on the Record Date must be represented at the Annual Meeting. Shares represented by proxies that reflect abstentions or "broker non-votes" will be counted as shares that are present and entitled to vote for purposes of determining the presence of a quorum.

What am I voting on at the Annual Meeting? What is the Board's recommendation on each of the proposals?

You are being asked to vote on four proposals, as follows:

Proposal Number	Proposal	Board Recommends
1	To elect the two nominees for director named in this Proxy Statement to hold office as Class I members of our Board of Directors until the 2021 annual meeting of stockholders.	**FOR BOTH director nominees**
2	To approve, on an advisory basis, the compensation of our named executive officers, as disclosed in this Proxy Statement.	**FOR**
3	To approve the Geron Corporation 2018 Equity Incentive Plan.	**FOR**
4	To ratify the selection by the Audit Committee of the Board of Directors of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018.	**FOR**

How many votes are needed to approve each proposal? What is the effect of abstentions and broker non-votes on each of the proposals?

The following table summarizes the minimum vote needed to approve each proposal and the effect of abstentions and broker non-votes on each of the proposals:

Proposal Number	Proposal	Votes Required to Approve Proposal	Effect of Abstentions	Effect of Broker Non-Votes
1	To elect the two nominees for director named in this Proxy Statement to hold office as Class I members of our Board of Directors until the 2021 annual meeting of stockholders.	The two nominees receiving the most "FOR" votes properly cast in person or by proxy will be elected. Only votes "FOR" will affect the outcome of the vote; "WITHHOLD" votes will have no effect on the outcome of the vote. However, under our Corporate Governance Guidelines, any nominee for director is required to submit an offer of resignation for consideration by the Nominating and Corporate Governance Committee if such nominee for director receives a greater number of "WITHHOLD" votes from his or her election than votes "FOR" such election. In such case, the Nominating and Corporate Governance Committee will then consider all of the relevant facts and circumstances and recommend to the Board the action to be taken with respect to such offer of resignation.	Not applicable	No effect
2	To approve, on an advisory basis, the compensation of our named executive officers, as disclosed in this Proxy Statement.	The affirmative vote of the holders of a majority of the shares having voting power present in person or represented by proxy at the Annual Meeting.	Against	No effect
3	To approve the Geron Corporation 2018 Equity Incentive Plan.	The affirmative vote of the holders of a majority of the shares having voting power present in person or represented by proxy at the Annual Meeting.	Against	No effect
4	To ratify the selection by the Audit Committee of the Board of Directors of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018.	The affirmative vote of the holders of a majority of the shares having voting power present in person or represented by proxy at the Annual Meeting.	Against	Not applicable[(1)]

(1) This proposal is considered to be a "routine" matter under NYSE rules. Accordingly, if you hold your shares in street name and do not provide voting instructions to your broker, bank or other agent that holds your shares, your broker, bank or other agent has discretionary authority under NYSE rules to vote your shares on this proposal. For more information, see "If I am a beneficial owner of shares held in street name and I do not provide my broker or bank with my voting instructions, what happens?" and "What are broker non-votes?" below.

What are the choices in voting?

For Proposal 1, you may either vote "FOR" both nominees to the Board of Directors or you may "WITHHOLD" your vote for both nominees or any nominee you specify. For Proposals 2, 3 and 4, you may vote "FOR" the proposal or "AGAINST" the proposal or "ABSTAIN" from voting on the proposal.

Could other matters be decided at the Annual Meeting?

Our Bylaws require that we receive advance notice of any proposal to be brought before the Annual Meeting by our stockholders, and we have not received notice of any such proposals. If any other matter were to be properly submitted for a vote at the Annual Meeting, the proxy holders appointed by the Board will have the discretion to vote on those matters for you as they see fit. This includes, among other things, considering any motion to adjourn the Annual Meeting to another time and/or place, including for the purpose of soliciting additional proxies for or against a given proposal.

How do I vote my shares and what are the voting deadlines?

Please refer to the proxy card for instructions on, and access information for, voting by telephone, over the Internet or by mail.

Stockholder of Record: Shares Registered In Your Name

You are a stockholder of record if, on the Record Date, your shares were registered directly in your name with our transfer agent, Computershare Trust Company, N.A. As a stockholder of record, there are several ways for you to vote your shares.

- **Via the Internet.** You may vote at www.proxyvote.com, 24 hours a day, seven days a week. You will need the 16-Digit Control Number included on your Notice or your proxy card (if you received a printed copy of the proxy materials). Votes submitted through the Internet must be received by 11:59 p.m., Eastern Time, on May 14, 2018.
- **By Telephone.** You may vote using a touch-tone telephone by calling 1-800-690-6903, 24 hours a day, seven days a week. You will need the 16-Digit Control Number included on your Notice or your proxy card (if you received a printed copy of the proxy materials). Votes submitted by telephone must be received by 11:59 p.m., Eastern Time, on May 14, 2018.
- **By Mail.** If you received printed proxy materials, you may submit your vote by completing, signing, and dating each proxy card received and returning it in the postage-paid envelope. Sign your name exactly as it appears on the proxy card. Proxy cards submitted by mail must be received no later than May 14, 2018 to be voted at the Annual Meeting.
- **During the Annual Meeting.** Stockholders may also submit their vote if they attend the Annual Meeting in person.

The Internet and telephone voting procedures described above, which comply with Delaware law, are designed to authenticate stockholders' identities, to allow stockholders to vote their shares, and to confirm that their instructions have been properly recorded. However, please be aware that you must bear any costs associated with your Internet access, such as usage charges from Internet access providers and telephone companies.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

You are a beneficial owner, if on the Record Date, your shares were held in an account at a brokerage firm, bank, dealer, or other similar organization and not in your name. The organization holding your account is considered to be the stockholder of record for purposes of voting at the Annual Meeting. Being a beneficial owner means that, like most stockholders, your shares are held in "street name" and these proxy materials are being forwarded to you by that organization.

As a beneficial owner, you should have received a Notice or voting instructions from the broker or other nominee holding your shares. You should follow the instructions in the Notice or voting instructions provided by your broker or nominee in order to instruct your broker or other nominee on how to vote your shares. The availability of telephone and Internet voting will depend on the voting process of the broker or nominee. Please contact your bank, broker or other agent if you have questions about their instructions on how to vote your shares. To vote in person at the 2018 Annual Meeting, you must obtain a valid proxy from your broker, bank, or other agent, and attend the meeting in person to submit your vote.

If you do not provide your broker or bank with instructions on how to vote your shares, your broker or bank will be able to vote your shares with respect to the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018 (Proposal 4). For more information, see "If I am a beneficial owner of shares held in street name and I do not provide my broker or bank with my voting instructions, what happens?" and "What are broker non-votes?" below.

Geron Plan Participants

As trustee of the Geron 401(k) Plan, Prudential Bank and Trust FSB will receive a proxy that incorporates all the shares owned by the Geron 401(k) Plan and will vote such proxy as directed by the Geron 401(k) sponsor.

If you purchased through the 1996 Employee Stock Purchase Plan and the 2014 Employee Stock Purchase Plan and your shares are held in the name of a broker, please refer to the discussion above under "Beneficial Owner: Shares Registered in the Name of a Broker or Bank."

If I am a shareholder of record and I do not vote, or if I return a proxy card or otherwise vote without giving specific voting instructions, what happens?

If you are a stockholder of record and you do not specify your vote on each proposal individually when voting via the Internet, over the telephone or if you sign and return a proxy card without giving specific voting instructions, then your shares will be voted in line with the Board recommendations above as described under "What am I voting on at the Annual Meeting? What is the Board's recommendation on each of the proposals?" If any other matter is properly presented at the 2018 Annual Meeting, your proxyholder (one of the individuals named on your proxy card) will vote your shares using his or her best judgment.

If I am a beneficial owner of shares held in street name and I do not provide my broker or bank with my voting instructions, what happens?

If you are a beneficial owner of shares registered in the name of your broker, bank or other agent, and you do not instruct your broker, bank or other agent how to vote your shares, your broker, bank or other agent may still be able to vote your shares in its discretion. In this regard, under the rules of the New York Stock Exchange (NYSE), brokers, banks and other securities intermediaries that are subject to NYSE rules may use their discretion to vote your "uninstructed" shares with respect to matters considered to be "routine" under NYSE rules, but not with respect to "non-routine" matters. In this regard, Proposals 1, 2 and 3 are considered to be "non-routine" under NYSE rules meaning that your broker may not vote your shares on those proposals in the absence of your voting instructions. However, Proposal 4 is considered to be a "routine" matter under NYSE rules meaning that if you do not return voting instructions to your broker by its deadline, your shares may be voted by your broker in its discretion on Proposal 4.

If you are a beneficial owner of shares held in street name, in order to ensure your shares are voted in the way you would prefer, you must provide voting instructions to your broker, bank or other agent by the deadline provided in the materials you receive from your broker, bank or other agent.

What are broker non-votes?

As discussed above, when a beneficial owner of shares held in street name does not give voting instructions to his or her broker, bank or other securities intermediary holding his or her shares as to how to vote on matters deemed to be "non-routine" under NYSE rules, the broker, bank or other such agent cannot vote the shares. These un-voted shares are counted as "broker non-votes." Proposals 1, 2 and 3 are considered to be "non-routine" under NYSE rules and we therefore expect broker non-votes to exist in connection with those proposals.

As a reminder, if you are a beneficial owner of shares held in street name, in order to ensure your shares are voted in the way you would prefer, you must provide voting instructions to your broker, bank or other agent by the deadline provided in the materials you receive from your broker, bank or other agent.

Can I revoke or change my vote after I submit my proxy?

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record, you may revoke or change your vote at any time before the final vote at the Annual Meeting by:

- signing and returning a new proxy card with a later date;
- submitting a later-dated vote by telephone or via the Internet — only your latest Internet or telephone proxy received by 11:59 p.m., Eastern Time, on May 14, 2018, will be counted;
- attending the Annual Meeting in person and voting again; or
- delivering a written revocation to our Corporate Secretary at Geron's offices, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025, before the Annual Meeting.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

If you are a beneficial owner of your shares, you must contact the broker or other nominee holding your shares and follow their instructions for revoking or changing your vote.

How will your proxy be counted?

Votes will be counted by the Inspector of Election appointed for the Annual Meeting, who will separately count "FOR," "WITHHOLD" and broker non-votes with respect to Proposal 1 regarding the election of directors, and, with respect to Proposals 2, 3 and 4, "FOR" and "AGAINST" votes, abstentions and broker non-votes.

Is my vote confidential?

Yes. Proxy cards, ballots and voting tabulations that identify stockholders by name are kept confidential. There are exceptions for contested proxy solicitations or when necessary to meet legal requirements. In addition, all comments written on a proxy card or elsewhere will be forwarded to management, but your identity will be kept confidential unless you ask that your name be disclosed.

How can I find out the results of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. Final voting results will be published by Geron in a Current Report on Form 8-K, filed with the SEC, that we expect to file within four business days after the Annual Meeting. If final voting results are not available to us in time to file a Current Report on Form 8-K within four business days after the Annual Meeting, we intend to file a Current Report on Form 8-K to

publish preliminary results and, within four business days after the final results are known to us, file an additional Current Report on Form 8-K to publish the final results.

Who is paying for this proxy solicitation?

We will pay the entire cost of solicitation of proxies, including preparation, assembly, printing and mailing of this Proxy Statement, the proxy card and any additional information furnished to stockholders. Copies of solicitation materials will be furnished to banks, brokerage houses, fiduciaries and custodians holding in their names shares of Common Stock beneficially owned by others to forward to such beneficial owners. In addition, we may reimburse persons representing beneficial owners of Common Stock for their costs of forwarding solicitation materials to such beneficial owners. The original solicitation of proxies by mail may be supplemented by solicitation by mail, telephone or other electronic means, or in person, by our directors, officers, or other regular employees, or at our request, by Alliance Advisors, LLC. No additional compensation will be paid to directors, officers or other regular employees for such services, but Alliance Advisors will be paid its customary fee, estimated to be $6,000, to render solicitation services.

When are stockholder proposals due for next year's Annual Meeting?

See the sub-section entitled "Stockholder Nominations and Proposals for 2019 Annual Meeting" under the section entitled "Other Matters."

How can I obtain a copy of Geron's Annual Report on Form 10-K?

We will mail to you without charge, upon written request, a copy of our Annual Report on Form 10-K filed with the SEC for the fiscal year ended December 31, 2017, as well as a copy of any exhibit specifically requested. Requests should be sent to: Corporate Secretary, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025. A copy of our Annual Report on Form 10-K has also been filed with the SEC and may be accessed from the SEC's homepage (www.sec.gov). You may also view and download our 2017 Annual Report on Form 10-K on our website at www.geron.com as well as www.proxyvote.com.

What is householding and how does it affect me?

Some brokers and other nominee record holders may be participating in the practice of "householding" proxy statements. This means that only one copy of this Proxy Statement and 2017 Annual Report on Form 10-K or the Notice may have been sent to multiple stockholders in a stockholder's household. Once you have received notice from your broker that they will be "householding" communications to your address, "householding" will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in "householding" and would prefer to receive separate copies of the proxy statement, annual report or the notice of internet availability of proxy materials, please notify your broker or our Investor Relations department. We will promptly deliver copies of the Proxy Statement and our 2017 Annual Report on Form 10-K or the Notice to any stockholder who contacts our Investor Relations department at (650) 473-7765 or by mail addressed to Investor Relations, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025, requesting such copies. If you receive multiple copies of the proxy statement and annual report at your household and would like to receive a single copy of the proxy statement and annual report for your household in the future, you should contact your broker, other nominee record holder, or our Investor Relations department to request a single copy of the proxy statement and annual report.

MATTERS TO BE CONSIDERED AT THE 2018 ANNUAL MEETING

PROPOSAL 1

ELECTION OF DIRECTORS

Board Structure

Our Board currently consists of seven directors, six of whom are "independent," as that term is defined by Nasdaq Rule 5602(a)(2), and one of whom is an executive officer of the Company. Our Bylaws provide for the classification of the Board into three classes, as nearly equal in number as possible, with staggered terms of office so that one class of the Board is elected annually, and each class of directors stands for election every three years. Our Bylaws also provide that upon expiration of the term of office for a class of directors, nominees for such class will be elected for a term of three years or until their successors are duly elected and qualified.

The term of office of the Class I directors, John A. Scarlett, M.D.; and Robert J. Spiegel, M.D., FACP will expire at the Annual Meeting in May 2018. Proxies may only be voted for the two Class I directors nominated for election at the Annual Meeting. The Class II directors, Hoyoung Huh, M.D., Ph.D., and Daniel M. Bradbury have one year remaining on their terms of office. The Class III directors, Karin Eastham; V. Bryan Lawlis, Ph.D.; and Susan Molineaux, Ph.D., have two years remaining on their terms of office.

The following table provides summary information about each director nominee and continuing director as of January 31, 2018:

			Committee Memberships			
Name and Principal Position	**Age**	**Independent**	**AC**	**CC**	**NG**	**Other Public Boards**
2018 Director Nominees:						
John A. Scarlett, M.D. President and Chief Executive Officer	66	No				2
Robert J. Spiegel, M.D., FACP Independent Director	68	Yes		C		2
Continuing Directors:						
Daniel M. Bradbury Independent Director	56	Yes	M, FE		M	2
Hoyoung Huh, M.D., Ph.D. Chairman of the Board Independent Director	48	Yes			M	2
Karin Eastham Retired C.P.A. Independent Director	68	Yes	C, FE	M		2
V. Bryan Lawlis, Ph.D. Independent Director	66	Yes	M	M		2
Susan M. Molineaux, Ph.D. President, Chief Executive Officer and Director, Calithera Biosciences, Inc. Independent Director	64	Yes			C	2

AC: Audit Committee

CC: Compensation Committee

NG: Nominating and Corporate Governance Committee

C: Chair

M: Member

FE: Financial Expert

NOMINEES FOR ELECTION TO THE BOARD OF DIRECTORS
For a Three-Year Term Expiring at the 2021 Annual Meeting

The Board has selected two nominees for Class I directors, both of whom are currently directors of Geron and were previously elected by the stockholders.

Set forth below is a brief biography of each nominee for Class I director, the periods during which they have served as a director of Geron, and information furnished by them as to principal occupations and public company directorships held by them. The biographies below also include a discussion of the specific experience, qualifications, attributes or skills of each nominee that led the Nominating and Corporate Governance Committee and the Board to conclude, as of the date of this Proxy Statement, that each nominee for Class I director should continue to serve as a director. Each person nominated for election has consented to being named as a nominee in this Proxy Statement and has agreed to serve if elected, and the Board has no reason to believe that any nominee will be unable to serve.

Class I Director Nominees (Term Expiring at the 2021 Annual Meeting)

John A. Scarlett, M.D.

Experience

Dr. Scarlett has served as our Chief Executive Officer and a director since joining Geron in September 2011 and President since January 2012. Dr. Scarlett also serves as a director for Chiasma, Inc., a biopharmaceutical company focused on transforming injectable drugs into oral medications, since February 2015, and CytomX Therapeutics, Inc., an oncology-oriented company, since June 2016. Prior to joining Geron, Dr. Scarlett served as President, Chief Executive Officer and a member of the board of directors of Proteolix, Inc., a privately-held, oncology-oriented biopharmaceutical company, from February 2009 until its acquisition by Onyx Pharmaceuticals, Inc., an oncology-oriented biopharmaceutical company, in November 2009. From February 2002 until its acquisition by Ipsen, S.A. in October 2008, Dr. Scarlett served as the Chief Executive Officer and a member of the board of directors of Tercica, Inc., an endocrinology-oriented biopharmaceutical company, and also as its President from February 2002 through February 2007. From March 1993 to May 2001, Dr. Scarlett served as President and Chief Executive Officer of Sensus Drug Development Corporation. In 1995, he co-founded Covance Biotechnology Services, Inc., a contract biopharmaceutical manufacturing operation, and served as a member of its board of directors from inception to 2000. From 1991 to 1993, Dr. Scarlett headed the North American Clinical Development Center and served as Senior Vice President of Medical and Scientific Affairs at Novo Nordisk Pharmaceuticals, Inc., a wholly-owned subsidiary of Novo Nordisk A/S. Dr. Scarlett received his B.A. degree in chemistry from Earlham College and his M.D. from the University of Chicago, Pritzker School of Medicine.

Qualifications

As the only management representative on the Board, Dr. Scarlett brings management's perspective to the Board's discussions about Geron's business and strategic direction. In addition, the Board believes Dr. Scarlett's deep understanding of what makes businesses work effectively and efficiently, as well as his medical background and extensive drug development experience, provide valuable insights to the Board.

Serving as a director for other publicly-held biopharmaceutical companies provides Dr. Scarlett with alternate viewpoints on business strategy and board decision-making, which we believe enhances his contributions to our Board. Dr. Scarlett has demonstrated his ability to dedicate sufficient time and focus on his duties as a member of our Board and attended 100% of the Board meetings in 2017. In accordance with our Board's standard practice, Dr. Scarlett reviews scheduled Board meeting dates a year in advance to confirm availability to participate and attend all our Board meetings, and prioritizes Geron's meetings over Chiasma and CytomX board meetings. Accordingly, the Board and the Nominating and Corporate Governance Committee believe that Dr. Scarlett should be re-elected to serve as a director based on his business and medical expertise

acquired in successfully holding executive and leadership positions in biotechnology companies, and his demonstrated reliability and commitment to service on our Board.

Robert J. Spiegel, M.D., FACP

Experience

Dr. Spiegel has served as a director of Geron since May 2010. Dr. Spiegel currently serves as an Associate Professor at the Weill Cornell Medical School. He is also a director of Edge Therapeutics, Inc., a biotechnology company, since August 2013; and Sucampo Pharmaceuticals, Inc., a biopharmaceutical company, since January 2015. He served as a director for Avior Computing Corporation, a privately-held governance risk and compliance process technology company, from October 2011 to November 2017; Talon Therapeutics, Inc., a biopharmaceutical company, from July 2010 to July 2013; Capstone Therapeutics Corp., a biotechnology company, from May 2010 to January 2012; the Cancer Institute of New Jersey from 1999 to 2009; and Cancer Care New Jersey from 1995 to 2011. From March 2011 to April 2016, Dr. Spiegel served as Chief Medical Officer of PTC Therapeutics, Inc., a biopharmaceutical company focused on discovering and developing treatments for rare disorders. In 2009, after 26 years with the Schering-Plough Corporation (now Merck & Co.), a global healthcare company, Dr. Spiegel retired as Chief Medical Officer and Senior Vice President of the Schering-Plough Research Institute, the pharmaceutical research arm of the Schering-Plough Corporation. His career at Schering-Plough involved various positions, including Director of clinical research for oncology, Vice President of clinical research, and Senior Vice President of worldwide clinical research. Following a residency in internal medicine, Dr. Spiegel completed a fellowship in medical oncology at the National Cancer Institute, and from 1981 to 1999 he held academic positions at the National Cancer Institute and New York University Cancer Center. Dr. Spiegel holds a B.A. from Yale University and an M.D. from the University of Pennsylvania.

Qualifications

The Board believes Dr. Spiegel's extensive medical experience developing oncology products, his deep understanding of pharmaceutical research and development, and broad expertise in gaining regulatory approval for drug candidates, enhances the Board's ability to critically assess the progress and potential of imetelstat, and qualifies Dr. Spiegel to be re-elected to serve as a director.

Vote Required and Board Recommendation

Directors are elected by a plurality of the votes of the holders of shares present in person or represented by proxy at the meeting. Each of the two nominees receiving the highest number of "FOR" votes properly cast in person or by proxy at the meeting will be elected as a Class I director of Geron. In tabulating the voting results for the election of directors, only "FOR" and "WITHHOLD" votes and broker non-votes are counted. "WITHHOLD" votes and broker non-votes will not have any effect on the outcome of the election. In the event that any nominee should be unavailable for election as a result of an unexpected occurrence, shares that would have been voted for that nominee will instead will be voted for the election of a substitute nominee, if any, proposed by the Nominating and Corporate Governance Committee and the Board.

Although the election of directors at the Annual Meeting is uncontested and directors are elected by a plurality of votes cast, and we therefore expect that each of the named nominees for director will be elected at the Annual Meeting, under our Corporate Governance Guidelines, any nominee for director is required to submit an offer of resignation for consideration by the Nominating and Corporate Governance Committee if such nominee for director (in an uncontested election) receives a greater number of "WITHHOLD" votes from his or her election than votes "FOR" such election. In such case, the Nominating and Corporate Governance Committee will then consider all of the relevant facts and circumstances and recommend to the Board the action to be taken with respect to such offer of resignation. Promptly following the Board's decision, we would disclose that decision and an explanation of such decision in a filing with the SEC or a press release.

The Board of Directors Unanimously Recommends That Stockholders Vote <u>FOR</u> the Election of Both Nominees to the Board of Directors

MEMBERS OF THE BOARD OF DIRECTORS CONTINUING IN OFFICE

Set forth below is a brief biography of each continuing director composing the remainder of the Board with terms expiring as shown, including the periods during which they have served as a director of Geron, and information furnished by them as to principal occupations and public company directorships held by them. The biographies below also include a discussion of the specific experience, qualifications, attributes or skills of each continuing director that led the Nominating and Corporate Governance Committee and the Board to conclude, as of the date of this Proxy Statement, that the applicable director should continue to serve as a director.

Class II Directors (Term Expiring at the 2019 Annual Meeting)

Hoyoung Huh, M.D., Ph.D.

Experience

Dr. Huh has been the Chairman of the Board since September 2011, served as our interim Executive Chairman from February 2011 to September 2011, and has served as a director of Geron since May 2010. He is also Chairman of the board of directors of CytomX Therapeutics, Inc., an oncology-oriented company, since February 2012, and a director of Rezolute, Inc. (formerly AntriaBio, Inc.), a biopharmaceutical company focused on developing therapies for diabetes, since January 2013. Additionally, Dr. Huh serves as a member of the boards of directors of several privately-held companies. Dr. Huh served as a director of ADDEX Pharmaceuticals, a pharmaceutical discovery and development company, from May 2011 to May 2014; as Chairman of the board of directors of BiPar Sciences, Inc., a wholly-owned subsidiary of Sanofi-Aventis, a global pharmaceutical company, from February 2008 to December 2011; as a director of Facet Biotech, a wholly-owned subsidiary of Abbott, a global, broad-based health care company, from September 2009 to April 2010; and as a director of Nektar Therapeutics, a clinical-stage biopharmaceutical company, from February 2008 to May 2009. Dr. Huh has held several senior management positions in the biopharmaceutical industry, including President and Chief Executive Officer at BiPar and Chief Operating Officer and Senior Vice President of Business Development and Marketing at Nektar. Prior to Nektar, Dr. Huh was a partner at McKinsey & Company, a global management consulting firm, where he was in the biotechnology and biopharmaceutical sectors. Prior to McKinsey, he held positions as a physician and researcher at Cornell University Medical College and Sloan-Kettering Cancer Center. Dr. Huh holds an A.B. in biochemistry from Dartmouth College and an M.D. and Ph.D. in genetics and cell biology from Cornell University Medical College and Sloan-Kettering Institute.

Qualifications

The Board believes Dr. Huh's management and operational experience as President and Chief Executive Officer of BiPar Sciences and Chief Operating Officer of Nektar Therapeutics, his significant expertise in implementing strategic and line management initiatives at McKinsey and his knowledge of biotechnology and pharmaceutical collaborations, qualifies Dr. Huh to serve as a director and Chairman of the Board.

Daniel M. Bradbury

Experience

Mr. Bradbury has served as a director of Geron since September 2012. He also serves as a member of the boards of directors of Corcept Therapeutics Incorporated, a company focused on the discovery and development of drugs that regulate the effects of cortisol, since October 2012 and Intercept Pharmaceuticals, Inc., a biopharmaceutical company focused on the development and commercialization of novel therapeutics for non-viral liver diseases, since July 2016. Additionally, Mr. Bradbury serves on the boards of directors of several privately-held companies. Mr. Bradbury also served as a member of the boards of directors of BioMed Realty Trust, Inc., a real estate investment trust, from January 2013 to January 2016 and Illumina, Inc., a manufacturer of life science tools and reagents, from January 2004 to May 2017. Mr. Bradbury is also a member of the board of trustees of the Keck Graduate Institute. He also serves as an advisory board member for the University of California San Diego, Rady School of Management's Deans Advisory Board and the BioMed Ventures

Advisory Committee. Mr. Bradbury held several senior positions at Amylin Pharmaceuticals, Inc., a biopharmaceutical company focused on diabetes and metabolic disorders, including Chief Executive Officer from March 2007 until its acquisition by Bristol-Myers Squibb Company in August 2012. In addition, Mr. Bradbury served as a member of the board of directors of Amylin from June 2006 until August 2012. Prior to joining Amylin, he spent ten years at SmithKline Beecham Pharmaceuticals, a pharmaceutical company, holding a number of sales and marketing positions. He received a Bachelor of Pharmacy from Nottingham University and a Diploma in Management Studies from Harrow and Ealing Colleges of Higher Education in the United Kingdom.

Qualifications

Mr. Bradbury brings significant experience in leadership positions at biopharmaceutical companies, making his perspective on the pharmaceutical industry and healthcare related issues valuable to Geron's Board. The Board believes that Mr. Bradbury's extensive experience in the biopharmaceutical industry, together with his experience in the research, development and commercialization of pharmaceutical drug products, qualifies Mr. Bradbury to serve as a director.

Class III Directors (Term Expiring at the 2020 Annual Meeting)

Karin Eastham

Experience

Ms. Eastham has served as a director of Geron since March 2009. Ms. Eastham also serves as a member of the boards of directors of Illumina, Inc., a manufacturer of life science tools and reagents, since July 2004; and Veracyte, Inc., a molecular diagnostics company, since December 2012. Ms. Eastham also served as a director of MorphoSys AG, a Frankfurt Stock Exchange-listed biotechnology company, from May 2012 to May 2017; Trius Therapeutics, Inc., a biopharmaceutical company, from 2009 until its sale in 2013; Amylin Pharmaceuticals, Inc., a biopharmaceutical company focused on diabetes and metabolic disorders, from 2005 until its sale in 2012; and Genoptix, Inc., a provider of specialized laboratory services, from 2008 until its sale in 2011. From 1976 until her retirement in September 2008, Ms. Eastham has held several senior management positions in finance in the biopharmaceutical industry, including with the Burnham Institute for Medical Research, a non-profit corporation engaged in basic biomedical research; Diversa Corporation, a biotechnology company; CombiChem, Inc., a computational chemistry company; Cytel Corporation, a biopharmaceutical company; and Boehringer Mannheim Corporation, a biopharmaceutical company. Ms. Eastham holds a B.S. and an M.B.A. from Indiana University and is a retired Certified Public Accountant.

Qualifications

The Board believes Ms. Eastham's understanding of biotechnology companies, combined with her business leadership and financial experience, her contributions to the Board's understanding of corporate governance and strategy for life science companies through her experience as a director in the biopharmaceutical industry, and her extensive senior management experience in the biopharmaceutical industry, particularly in key corporate finance and accounting positions, provides important perspectives to the Board. In addition, the Board believes Ms. Eastham's financial expertise and deep business experience, as well as her demonstrated commitment to our Board and her extensive knowledge of Geron's business and strategies, based on her service on Geron's Board since 2009 qualifies her to serve as director.

V. Bryan Lawlis, Ph.D.

Experience

Dr. Lawlis has served as a director of Geron since March 2012. He also serves as a member of the boards of directors of BioMarin Pharmaceutical, Inc., a biopharmaceutical company specializing in rare genetic diseases, since June 2007; Coherus BioSciences, Inc., a biologics platform company specializing in biosimilars, since May 2014; and several privately-held biotechnology companies. From August 2013 to September 2014, Dr. Lawlis served as a member of the board of directors of KaloBios Pharmaceuticals, Inc., a biopharmaceutical company. Dr. Lawlis was also the President and Chief Executive Officer of Itero Biopharmaceuticals LLC, a privately-held, early stage biopharmaceutical company that he co-founded, from 2006 to 2011, and has served as an advisor to Phoenix Venture Partners, a venture capital firm specializing in manufacturing technologies, since October 2015. Dr. Lawlis has held several senior management positions in the biopharmaceutical industry, including President and Chief Executive Officer of Aradigm Corporation, a specialty drug company focused on drug delivery technologies, and President and Chief Executive Officer of Covance Biotechnology Services, a contract biopharmaceutical manufacturing operation, which he co-founded. Dr. Lawlis holds a B.A. in microbiology from the University of Texas at Austin and a Ph.D. in biochemistry from Washington State University.

Qualifications

The Board believes Dr. Lawlis' extensive experience in manufacturing biotechnology and other pharmaceutical products, as well as his expertise in the research and development of drug products and in the management and conduct of clinical trials and drug regulatory processes, qualifies Dr. Lawlis to serve as a director.

Susan M. Molineaux, Ph.D.

Experience

Dr. Molineaux has served as a director of Geron since September 2012. Dr. Molineaux has been Chief Executive Officer and President of Calithera Biosciences, Inc., a biotechnology company developing oncology therapeutics, since co-founding the company in June 2010. She also serves as a member of the board of directors of Theravance Biopharma, Inc., a biopharmaceutical company located in South San Francisco, since April 2015, where she is a member of the Sciences and Technology Committee, and as a Scientific Advisor to Lightstone Ventures, a private life sciences investment company, since September 2016. Prior to Calithera, Dr. Molineaux co-founded Proteolix, Inc., a privately-held oncology-oriented biopharmaceutical company, where she served as Chief Scientific Officer from December 2003 until December 2005 and from February 2009 until November 2009, and as President and Chief Executive Officer from January 2006 until February 2009, until the company's acquisition by Onyx Pharmaceuticals, Inc., a global oncology-oriented biopharmaceutical company, in November 2009. Previously, Dr. Molineaux held several senior management positions in the biopharmaceutical industry, including Vice President of Biology at Rigel Pharmaceuticals, Inc., a biopharmaceutical company focused on inflammatory and autoimmune diseases; Vice President of Biology at Praelux, Inc., a biopharmaceutical company; and Vice President of Drug Development at Praecis Pharmaceuticals, Inc., an oncology-focused biopharmaceutical company. Dr. Molineaux holds a B.S. in biology from Smith College, a Ph.D. in molecular biology from Johns Hopkins University, and completed a postdoctoral fellowship at Columbia University.

Qualifications

Dr. Molineaux has demonstrated her ability to dedicate sufficient time and focus on her duties as a director of Geron, including her role as Chair of our Nominating and Corporate Governance Committee. As President and director of Calithera, Dr. Molineaux does not serve on any Calithera board committees, and accordingly serves only on board committees for Geron and Theravance. In the past year, Dr. Molineaux has attended at least 75% of the meetings for Geron's Board and Geron's Nominating and Corporate Governance

Committee. Dr. Molineaux's duties on Theravance's Science and Technology Committee are limited in scope and therefore our Board believes that her membership on that committee does not interfere with her ability to reliably devote time to Geron's Board, as well as Geron's Nominating and Corporate Governance Committee. In accordance with our Board's standard practice, Dr. Molineaux reviews scheduled Geron Board and committee meeting dates a year in advance to confirm availability to participate and attend all Board and committee meetings. All the companies for which she serves as a director are located in the San Francisco Bay Area, enabling her to travel and regularly attend Geron's Board and committee meetings. Dr. Molineaux does not serve on the board of any privately-held companies.

The Board believes Dr. Molineaux's extensive experience in pharmaceutical and oncology drug development, and her expertise in managing and conducting clinical trials, qualifies Dr. Molineaux to be a director of the Company. The Board and the Nominating and Corporate Governance Committee also believe that Dr. Molineaux provides great value to the Board and contributes significantly to discussions and decision-making. Dr. Molineaux has extensive experience in the biotechnology industry, with current executive experience at Calithera. Accordingly, the Board believes that Dr. Molineaux's contributions as director are substantial, based upon her business and scientific expertise acquired in successfully holding executive and leadership positions in biotechnology companies, and her demonstrated reliability and commitment to service on our Board and Nominating and Corporate Governance Committee. Dr. Molineaux's knowledge of the biotechnology industry and business, and healthcare related issues, combined with her experience as the chief executive officer of a public company, qualifies her to serve as a director.

BOARD LEADERSHIP AND GOVERNANCE

We have an ongoing commitment to excellence in corporate governance and business practices. In furtherance of this commitment, we regularly monitor developments in the area of corporate governance and review our processes, policies and procedures in light of such developments. Key information regarding our corporate governance initiatives can be found on the Corporate Governance page under the Investor Relations section of our website at www.geron.com, including our Corporate Governance Guidelines, Code of Conduct, Insider Trading Policy and the charters for our Audit, Compensation and Nominating and Corporate Governance committees. We believe that our corporate governance policies and practices, including the substantial percentage of independent directors on our board of directors and the leadership of our independent Board Chair, empower our independent directors to effectively oversee our management—including the performance of our Chief Executive Officer—and provide an effective and appropriately balanced board governance structure.

Corporate Governance Guidelines

Our Board has adopted Corporate Governance Guidelines that set forth key principles to guide the operation of the Board and its committees in the exercise of their responsibilities to serve the interests of Geron and our stockholders. The current form of the Corporate Governance Guidelines can be found on the Corporate Governance page under the Investor Relations section of our website at www.geron.com. In addition, these guidelines are available in print to any stockholder who requests a copy. Please direct all requests to our Corporate Secretary, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025.

Board Independence

In accordance with Nasdaq listing standards and Geron's Corporate Governance Guidelines, a majority of the members of our board of directors must qualify as "independent" as defined by Nasdaq Rule 5605(a)(2). In keeping with these guidelines, a member of our Board may serve as a director of another company only to the extent such position does not conflict or interfere with such person's service as a director of Geron. The Board consults with our counsel to ensure that the Board's determinations regarding Board independence are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent listing standards of Nasdaq, as in effect from time to time.

Consistent with these considerations, our Board has determined affirmatively that Dr. Robert Spiegel, M.D., FACP, a nominee for election at the Annual Meeting, and all current and continuing directors, with the exception of Dr. Scarlett, are independent with the meaning of the Nasdaq listing standards. Dr. Scarlett, who is our President and Chief Executive Officer and a nominee for election at the Annual Meeting, is the sole non-independent director, and the Board regularly meets in executive sessions outside the presence of Dr. Scarlett.

There are no family relationships between any director and any of our executive officers. There are no arrangements or agreements relating to compensation provided by a third party to any member of our Board, including current nominees for director, in connection with their candidacy or board service to us.

Board Leadership Structure

The Board has an independent Chair, Dr. Huh, who has the authority, among other things, to call and preside over Board meetings, including meetings of the independent directors, to set meeting agendas and to determine materials to be distributed to the Board. Accordingly, the Board Chair has substantial ability to shape the work of the Board. We believe that separation of the positions of Board Chair and Chief Executive Officer reinforces the independence of the Board in its oversight of the business and affairs of Geron. As a result, we believe that having an independent Board Chair enhances the effectiveness of the Board. We believe that having a separate Board Chair and Chief Executive Officer creates an environment that enables the Board to have insightful and objective evaluation and oversight of management's performance and to determine whether management's actions are in the best interests of Geron and our stockholders.

In accordance with our Corporate Governance Guidelines, if the Board appoints a Board Chair who does not qualify as an independent director, the Board will then appoint a Lead Independent Director.

Board Committees and Meetings

It is Geron's policy to encourage directors to attend annual meetings of stockholders. All of our current directors attended our 2017 Annual Meeting. During the fiscal year ended December 31, 2017, the Board held seven meetings. The Board has an Audit Committee, a Compensation Committee, and a Nominating and Corporate Governance Committee. During the fiscal year ended December 31, 2017, each of the directors attended at least 75% of the aggregate number of meetings of the Board and the committees on which the director served during the portion of the last fiscal year for which he or she was a director or committee member.

Below is a description of each committee of the Board. Each of the committees has authority to engage and determine the compensation for legal counsel or other experts or consultants, as it deems appropriate, to assist with fulfilling its responsibilities. The Board has determined that each member of each committee meets the applicable Nasdaq and SEC rules and regulations regarding "independence" and that each member is free of any relationship that would impair his or her individual exercise of independent judgement with regard to Geron.

Audit Committee

The Audit Committee operates under a written charter that satisfies the applicable standards of the SEC and Nasdaq. A copy of the Audit Committee charter is available on our website at www.geron.com. The Audit Committee held eight meetings in 2017 and acted once by unanimous written consent. The Audit Committee's responsibilities include:

- appointing or terminating, approving the compensation of, and assessing the qualifications, performance and independence of our independent registered public accounting firm;
- pre-approving audit and permissible non-audit services and the terms of such services to be provided by our independent registered public accounting firm;

- reviewing the plan and scope of the annual audit of financial statements with the independent registered public accounting firm and members of management;
- reviewing and discussing with management and/or the independent registered public accounting firm, prior to public disclosure, our annual and quarterly financial statements and related disclosures in our Forms 10-K, Forms 10-Q, and earnings press releases, including critical accounting policies and practices used by us and information contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations;"
- recommending to the Board, based upon the Audit Committee's review and discussions with management and the independent registered public accounting firm, whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring our internal control over financing reporting and disclosure controls and procedures, including reviewing management's assessment and disclosures related to any significant changes, material weaknesses or significant deficiencies;
- overseeing compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters, including our insider trading compliance program;
- establishing policies and procedures for the receipt and retention of whistleblower complaints and concerns and overall compliance with our Code of Conduct;
- preparing the audit committee report required by the SEC to be included in our annual proxy statement;
- reviewing and approving or ratifying any related party transactions; and
- overseeing financial and operation risk exposures and the actions management has taken to limit, monitor and control such exposures.

The Board has determined that all of the members of the Audit Committee are financially literate and that two members of the Audit Committee, Ms. Eastham and Mr. Bradbury, have accounting and financial management expertise that qualifies each as an "Audit Committee Financial Expert," as such term is defined in Item 407(d)(5) of Regulation S-K promulgated by the SEC. See more information about the Audit Committee in the section entitled "Audit Committee Report."

Compensation Committee

The Compensation Committee operates under a written charter that satisfies the applicable standards of the SEC and Nasdaq. A copy of the Compensation Committee charter is available on our website at www.geron.com. The charter of the Compensation Committee allows it to delegate responsibilities to a subcommittee of the Compensation Committee, but only to the extent consistent with our certificate of incorporation, Bylaws, Nasdaq rules and Section 162(m) of the Internal Revenue Code of 1986, as amended (the "Code"). The Compensation Committee held five meetings in 2017 and acted once by unanimous written consent. The Compensation Committee's responsibilities include:

- establishing and overseeing our executive compensation philosophy and strategy;
- reviewing and approving the terms of any employment agreements, severance arrangements, change in control protections and other compensatory arrangements for our executive officers, including our Chief Executive Officer;
- annually reviewing and recommending to the Board corporate goals and objectives relevant to the compensation of our executive officers, including our Chief Executive Officer;
- reviewing and approving, or making recommendation to the Board with respect to, the compensation of our executive officers, including our Chief Executive Officer, based upon an annual evaluation of each individual's performance;

- overseeing and administering our cash and equity incentive plans, including establishing policies and procedures for the grant of equity-based awards and approving, or making recommendation to the full Board with respect to, the grant of such equity-based awards;
- appointing, compensating and overseeing the work of any compensation and benefits consultants, legal counsel or other experts or advisors retained by the Compensation Committee, including an independence assessment as outlined by Nasdaq rules;
- reviewing and discussing with management our compensation discussion and analysis disclosure to be included in our annual proxy statement;
- reviewing and making recommendations to our Board regarding non-employee director compensation; and
- reviewing and assessing the potential impact of our compensation practices on enterprise risk.

For information on the Compensation Committee's processes and procedures on the consideration and determination of executive compensation, see the sub-section entitled "Compensation Discussion and Analysis – Role of the Compensation Committee." For information on the Compensation Committee's processes and procedures with respect to non-employee director compensation matters, see the section entitled "Compensation of Directors."

Compensation Committee Interlocks and Insider Participation

Drs. Lawlis and Spiegel and Ms. Eastham served on the Compensation Committee for the entire fiscal year ended December 31, 2017. Neither Drs. Lawlis or Spiegel, nor Ms. Eastham, is a former or current officer or employee of Geron. None of our executive officers serves as a member of a compensation committee of any entity that has one or more executive officers serving as a member of our Board or Compensation Committee.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee operates under a written charter that satisfies the applicable standards of the SEC and Nasdaq. A copy of the Nominating and Corporate Governance Committee charter is available on our website at www.geron.com. The Nominating and Corporate Governance Committee held three meetings in 2017. The Nominating and Corporate Governance Committee's responsibilities include:

- developing, reviewing and recommending to the Board a set of corporate governance guidelines and principles;
- creating and recommending to the Board criteria for Board and committee membership;
- establishing procedures for identifying and evaluating individuals qualified to become members of the Board, including nominees recommended by stockholders;
- recommending to the Board the persons to be nominated for election or re-election as directors;
- reviewing and recommending to the Board the functions, duties and compositions of the Board committees;
- considering and reporting to the Board any questions of possible conflicts of interest of Board members; and
- assessing the performance of the Board, the Board committees and individual directors.

Specific qualifications and the process for recommending director candidates are provided in more detail under the sub-sections entitled "Director Nominees Recommended by Stockholders" and "Director Qualifications." The Nominating and Corporate Governance Committee will investigate, evaluate and interview, as appropriate, a director candidate with regard to his or her individual qualifications and expertise as well as how those characteristics fit with the needs of the Board and the long-term interests of our stockholders.

Board's Role in Risk Oversight

Geron is subject to a variety of risks, including those described under the section entitled "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2017. Some risks may be readily perceived and even quantified, while others are unexpected or unforeseeable. Risks can be external or can arise as a result of our internal business or financial activities.

The Board and our executive management team work together to manage our risks. It is management's responsibility to identify various risks facing the Company, bring the Board's attention to material risks, and implement appropriate risk management policies and procedures to manage risk exposure on a day-to-day basis. The Board has an active role in overseeing our risk management process directly or through its committees.

The Board has delegated responsibility for the oversight of specific risks to the Board committees as follows:

- The Audit Committee oversees management of financial risks. In addition to fulfilling its responsibilities for the oversight of our financial reporting processes and annual audit of Geron's financial statements, the Audit Committee also reviews with the independent registered public accounting firm and the Company's management the adequacy and effectiveness of our policies and procedures to assess, monitor and manage fraud risk and our ethical compliance program. The Audit Committee takes appropriate actions to set the best practices and highest standards for quality financial reporting, sound business risk practices and ethical behavior.
- The Compensation Committee is responsible for overseeing the management of risks relating to our employment policies and executive compensation plans and arrangements. In connection with structuring the executive compensation program, the Compensation Committee, together with the Board, considers whether the elements of such program, individually or in the aggregate, encourage our Named Executive Officers to take unnecessary risks. For further information, see the sub-section entitled "Risk Assessment of Compensation Policies and Practices."
- The Nominating and Corporate Governance Committee manages Geron's corporate governance practices. In addition, the Nominating and Corporate Governance Committee reviews risks associated with the independence of the Board, potential conflicts of interest and risks relating to management and Board succession planning.

While each committee is responsible for evaluating certain risks and overseeing the management of such risks within its respective oversight area, the entire Board is regularly informed through committee reports about such risks.

Risk Assessment of Compensation Policies and Practices

The Compensation Committee maintains a pay for performance compensation philosophy, but also recognizes that providing certain types of compensation incentives may inadvertently motivate individuals to act in ways that could be detrimental to the Company in order to maximize individual compensation. To minimize such risk, the Compensation Committee annually evaluates our compensation philosophy generally as it relates to all employees, as well as individual compensation elements of base salary, annual performance-based bonuses, equity awards, severance and change in control benefits and other benefits to ensure each is evaluated against appropriate standards and that such incentives provide for the achievement of target goals that are balanced between short-term rewards and long-term enhancement of stockholder value.

The Compensation Committee believes the following elements of our compensation program mitigate the risks associated with our compensation practices:

- setting annual base salaries consistent with the responsibilities of our Named Executive Officers and market comparables to ensure that our Named Executive Officers are not motivated to take excessive risks to achieve a reasonable level of financial security;

- establishing corporate goals for our annual performance-based bonus program that are consistent with our annual operating and strategic plans and are designed to achieve a proper risk/reward balance without excessive risk taking;
- requiring an executive officer to forfeit his or her entire annual performance-based bonus if we determine that such executive officer has engaged in any misconduct intended to affect the payment of his or her annual performance-based bonus, or has otherwise engaged in any act or omission that would constitute cause for termination of his or her employment, as defined by his or her employment agreement;
- having a mix of fixed and variable, annual and long-term and cash and equity compensation elements to encourage strategies and actions that balance short-term and long-term best interests;
- granting stock option awards which provide value only if the market price of our Common Stock increases to encourage our Named Executive Officers to take a long-term view of our business;
- absence of employment agreements or contracts that contain multi-year guarantees of salary increases, non-performance-based bonuses or equity compensation;
- emphasizing pay equity amongst our employees and with reference to external comparators; and
- having available, to the Compensation Committee and the Board, the discretion to measure and calculate achievement of corporate goals and other corporate performance measures, which prevents the compensation program from being susceptible to manipulation by a single employee.

The Compensation Committee has reviewed our compensation policies and practices as they relate to all employees and has determined that such policies and practices do not present any risks that are reasonably likely to have a material adverse effect on Geron, and instead, encourage behaviors that support sustainable value generation. In addition, the Compensation Committee has reviewed and evaluated our executive compensation program and believes that our executive compensation policies and practices do not encourage inappropriate actions or risk taking by our executive officers.

OTHER CORPORATE GOVERNANCE MATTERS

Code of Conduct

In 2003, we adopted a Code of Conduct, which is available in its entirety on the Corporate Governance page in the Investor Relations section of our website at www.geron.com and to any stockholder otherwise requesting a copy. All our directors, employees, executive officers, including our Chief Executive Officer and Chief Financial Officer, are required to adhere to the Code of Conduct in discharging their work-related responsibilities. Employees are required to report any conduct they believe in good faith to be an actual or apparent violation of the Code of Conduct. Amendments to the Code of Conduct, and any waivers from the Code of Conduct granted to our directors or executive officers, will be made available through our website as they are adopted. Accordingly, we intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Conduct by posting such information on our website at www.geron.com.

Whistleblower Policy

In keeping with the Sarbanes-Oxley Act of 2002, the Audit Committee has established procedures for the receipt and handling of complaints received by us regarding accounting, internal accounting controls, auditing matters, questionable financial practices or violations of our Code of Conduct (“complaints”). Contact information for an external hotline that is maintained by an independent third party has been distributed to all employees and consultants to allow for the confidential, anonymous submission of complaints by our employees and consultants. Any complaints received by this hotline are reviewed by the Audit Committee and our General Counsel.

Prohibitions on Derivative, Hedging, Monetization and Other Transactions

We maintain an insider trading policy that applies to all directors and employees, including our executive officers, which prohibits certain transactions in our Common Stock, including short sales, puts, calls or other transactions involving derivative securities, hedging or monetization transactions, purchases of our Common Stock on margin or borrowing against an account in which our Common Stock is held, or pledging our Common Stock as collateral for a loan. Our Audit Committee oversees compliance of our insider trading program, including approval of any material updates to the insider trading program. Our General Counsel serves as our insider trading compliance officer and reports, at least once annually, to the Audit Committee on his monitoring of the insider trading program. In addition, the Audit Committee meets with the Compliance Officer outside of the presence of any other executive officers. A copy of our insider trading policy is available on our website at www.geron.com.

Communications with the Board

Stockholders wishing to communicate with the Board, or with a specific Board member, may do so by writing to the Board, or to the individual Board member, and delivering the communication in person or mailing it to: Board of Directors, c/o Stephen N. Rosenfield, Corporate Secretary, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025. All mail addressed in this manner will be delivered to the Chair or Chairs of the Board committees with responsibilities touching most closely on the matters addressed in the communication. From time to time, the Board may change the process by which stockholders may communicate with the Board or its members. Please refer to our website for any changes to this process.

COMPENSATION OF DIRECTORS

The Compensation Committee determines non-employee director compensation, which the full Board reviews and approves upon recommendation from the Compensation Committee. When considering non-employee director compensation decisions, the Compensation Committee believes it is important to be informed as to current compensation practices of comparable publicly-held companies in the life sciences industry, especially to understand the demand and competitiveness for attracting and retaining an individual with each non-employee director's specific expertise and experience. Our compensation arrangements for our non-employee directors are set forth in our Non-Employee Director Compensation Policy (the "Director Compensation Policy"). The Director Compensation Policy outlines cash and equity compensation automatically payable to non-employee members of the Board, unless such non-employee director declines receipt of such cash or equity compensation by written notice to us. Every other year, the Compensation Committee reviews our non-employee director compensation relative to industry practices.

In February 2016, Radford, an independent compensation consultant, conducted a review of non-employee director compensation in comparison to an industry peer group for 2016 that was selected to evaluate the executive and non-employee directors' compensation based upon Geron's current market capitalization, revenue, stage of development and size of company. Based on this review, and guidance from Radford, the Board approved an amendment to the Director Compensation Policy to increase the size of the Initial Grant described below from 70,000 to 100,000 shares of Common Stock and the size of the Annual Grant described below from 35,000 to 50,000 shares of Common Stock, effective February 11, 2016. In January 2018, Radford again conducted a review of non-employee director compensation in comparison to our industry peer group that was selected by Radford in 2017. Based on this review, and guidance from Radford, effective January 31, 2018, the Board approved an amendment to the Director Compensation Policy to increase the size of the Initial Grant described below from 100,000 to 120,000 shares of Common Stock and the size of the Annual Grant described below from 50,000 to 70,000 shares of Common Stock, and to increase the additional cash retainer paid to the Chairman of the Board from $30,000 annually to $35,000 annually. For further discussion of the defined peer group recommended by Radford in 2017, see the sub-section entitled "Use of Market Data and Peer Group Analysis."

Cash Compensation

The following table describes the annual cash compensation applicable to each role performed by non-employee directors as outlined in the Director Compensation Policy in effect for the fiscal year ended December 31, 2017 ("fiscal 2017"):

Non-Employee Director Role	Base Retainer	Additional Retainer
Board member	$ 42,500	N/A
Chairman of the Board[1]	N/A	$ 30,000
Audit Committee Chair[2]	N/A	$ 25,000
Compensation Committee Chair[2]	N/A	$ 15,000
Nominating and Corporate Governance Committee Chair[2]	N/A	$ 10,000
Audit Committee member	N/A	$ 12,500
Compensation Committee member	N/A	$ 7,500
Nominating and Corporate Governance Committee member	N/A	$ 5,000

(1) Effective January 31, 2018, the additional cash retainer paid to the Chairman of the Board was increased from $30,000 annually to $35,000 annually.

(2) Committee Chair does not also receive additional Committee member compensation.

Under the Director Compensation Policy, annual non-employee director cash compensation is paid quarterly in arrears in cash, or, at each director's election, in fully vested shares of our Common Stock issued under our 2011 Incentive Award Plan (the "2011 Plan") (or our 2018 Equity Incentive Plan (the "2018 Plan") if Proposal 3 is approved by the stockholders at the Annual Meeting) based on the closing price of our Common Stock as reported by the Nasdaq Global Select Market on the date retainers would have otherwise been paid.

Additionally, under the Director Compensation Policy non-employee directors are eligible to receive equity grants, as more fully described below under the sub-section entitled "Equity Compensation." Non-employee directors also receive reimbursement for out-of-pocket expenses incurred in connection with attendance at meetings of the Board.

Director Compensation Table

The following table provides compensation information for fiscal 2017, for each non-employee member of the Board who served in such capacity during fiscal 2017. Dr. Scarlett does not receive any compensation for his Board service.

Non-Employee Director	Fees Earned or Paid in Cash ($)	Option Awards ($)[1]	Total ($)
Bradbury, Daniel	60,000	94,145	154,145
Eastham, Karin	75,000	94,145	169,145
Huh, Hoyoung	77,500 [2]	94,145	171,645
Lawlis, V. Bryan	62,500	94,145	156,645
Molineaux, Susan	52,500 [3]	94,145	146,645
Spiegel, Robert	57,500 [4]	94,145	151,645

(1) Amounts represent the aggregate grant date fair value of stock option awards granted during the fiscal year ended December 31, 2017 as calculated in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718 ("FASB ASC Topic 718"). Refer to Note 8 of the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017 regarding assumptions underlying the valuation of stock option awards and the calculation method. For information

regarding the aggregate number of stock option awards held by the non-employee members of the Board at December 31, 2017, see the sub-section entitled "Outstanding Equity Awards at Fiscal Year-End for Non-Employee Directors."

(2) Represents fees paid in stock in lieu of cash through the issuance of an aggregate 35,182 shares of Geron Common Stock under the 2011 Plan.

(3) Represents fees paid in stock in lieu of cash through the issuance of an aggregate 23,833 shares of Geron Common Stock under the 2011 Plan.

(4) Includes $28,750 in fees paid in stock in lieu of cash through the issuance of an aggregate 13,051 shares of Geron Common Stock under the 2011 Plan.

Equity Compensation

Terms of Awards

Pursuant to the Director Compensation Policy, each individual who first becomes a non-employee director receives an initial stock option grant and thereafter each non-employee director is eligible to receive stock option grants on an annual basis. Non-employee director stock options are currently granted pursuant to the 2011 Plan, in accordance with the Director Compensation Policy. If Proposal 3 is approved by the stockholders at the Annual Meeting, then non-employee director stock options will be granted pursuant to the 2018 Plan. The following describes the equity compensation arrangements as outlined in the Director Compensation Policy in effect for fiscal 2017:

- *Initial Grant.* Each individual who first becomes a non-employee director, whether by election by Geron's stockholders or by appointment by the Board to fill a vacancy, automatically will be granted an option to purchase 100,000 shares of Common Stock on the date such individual first becomes a non-employee director (the "Initial Grant"). The Initial Grant will vest annually over three years upon each anniversary of the date of appointment to the Board, subject to the non-employee director's continuous service.

- *Annual Grant.* On the date of each annual meeting of our stockholders, each non-employee director (other than any director receiving an Initial Grant on the date of such annual meeting) who is then serving as a non-employee director and who will continue as a non-employee director following the date of such annual meeting automatically will be granted an option to purchase 50,000 shares of Common Stock (the "Annual Grant"). The Annual Grant will vest in full on the earlier of: (i) the date of the next annual meeting of our stockholders or (ii) the first anniversary of the date of grant, subject to the non-employee director's continuous service.

- *Exercise Price and Term of Options.* The exercise price of all options granted under the 2011 Plan is equal to the fair market value of a share of our Common Stock as reported by the Nasdaq Global Select Market on the date of grant of the option. Options granted under the 2011 Plan have a term of ten years from the date of grant, unless terminated earlier.

- *Exercise Period Post-Termination.* The options issued pursuant to the 2011 Plan remain exercisable until the earlier of the original expiration date of the option or 36 months following the optionee's termination of service as our non-employee director.

As described above, effective January 31, 2018, the Board approved an amendment to the Director Compensation Policy to increase the size of the Initial Grant from 100,000 to 120,000 shares of Common Stock and the size of the Annual Grant from 50,000 to 70,000 shares of Common Stock.

Effect of Certain Corporate and Termination Events

2011 Plan. As set forth in each option agreement under the 2011 Plan, the vesting for each Initial Grant and Annual Grant will accelerate in full in the event of a Change in Control of Geron (as defined in the 2011 Plan and described below under the sub-section entitled "Potential Payments Upon Termination or Change in

Control"). In addition, in the event a non-employee director experiences a termination of service as a result of such director's total and permanent disability (as defined in Section 22(e)(3) of the Code) or death, the portion of each outstanding option held by such director that would have vested during the 36 months after the date of such director's termination of service, will automatically vest. If Proposal 3 is approved by the stockholders at the Annual Meeting, then Initial Grants and Annual Grants will thereafter be granted pursuant to the 2018 Plan with terms generally consistent with the foregoing.

Option Grants to Non-Employee Directors in 2017

The following table sets forth the following information with respect to non-employee directors (six persons) for the fiscal year ended December 31, 2017: (i) stock options granted under the 2011 Plan; and (ii) the grant date fair value of stock options granted.

Non-Employee Director	Grant Date	Option Awards Granted During 2017 (#)	Grant Date Fair Value of Option Awards Granted During 2017 ($)[1]
Bradbury, Daniel	5/9/17 [2]	50,000	94,145
Eastham, Karin	5/9/17 [2]	50,000	94,145
Huh, Hoyoung	5/9/17 [2]	50,000	94,145
Lawlis, V. Bryan	5/9/17 [2]	50,000	94,145
Molineaux, Susan	5/9/17 [2]	50,000	94,145
Spiegel, Robert	5/9/17 [2]	50,000	94,145

(1) Amounts represent the grant date fair value of each stock option granted in 2017 calculated in accordance with FASB ASC Topic 718. Refer to Note 8 of the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017 regarding assumptions underlying the valuation of stock option awards and the calculation method.

(2) Stock option vests on the earlier of: (i) the date of the next annual meeting or (ii) the first anniversary of the date of grant of such option, subject to the non-employee director's continuous service to the Company.

Outstanding Equity Awards at Fiscal Year-End for Non-Employee Directors

The following table sets forth stock options outstanding for each non-employee director as of December 31, 2017.

	Option Awards Outstanding as of December 31, 2017	
Non-Employee Director	Exercisable (#)	Unexercisable (#)
Bradbury, Daniel	225,000	50,000
Eastham, Karin	300,500	50,000
Huh, Hoyoung	382,500	50,000
Lawlis, V. Bryan	260,000	50,000
Molineaux, Susan	225,000	50,000
Spiegel, Robert	260,000	50,000

PROPOSAL 2

ADVISORY VOTE TO APPROVE NAMED EXECUTIVE OFFICER COMPENSATION

As required by Section 951 of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Section 14A of the Securities Exchange Act of 1934, as amended (the "Exchange Act'), the Board is requesting stockholders to vote, on a non-binding advisory basis, to approve the compensation paid to Geron's Named Executive Officers, as disclosed in this Proxy Statement. This proposal, commonly known as a "say-on-pay" proposal, gives stockholders the opportunity to express their views on the compensation of Geron's Named Executive Officers.

This vote is not intended to address any specific item of compensation, but rather the overall compensation of our Named Executive Officers and our executive compensation philosophy, policies and practices described in this Proxy Statement. The overall compensation of our Named Executive Officers subject to the vote is disclosed in this Proxy Statement in the sections entitled "Compensation Discussion and Analysis" and "Executive Compensation Tables and Related Narrative Disclosure."

The Compensation Committee continually reviews our executive compensation program to determine whether such program achieves our desired goals of aligning our executive compensation structure with the Company's stockholders' interests and current market practices. As discussed in detail in the section entitled "Compensation Discussion and Analysis" of this Proxy Statement, Geron's executive compensation strategy and structure is designed to motivate our executive team to create long-term value for our stockholders through the achievement of strategic business objectives, while effectively managing the risks and challenges inherent in a clinical stage biotechnology company. As the long-term success of Geron depends on the talents of our employees, the compensation structure plays a significant role in our ability to attract, retain and motivate the highest quality workforce in a competitive employment environment in the San Francisco Bay Area while also promoting a high-performance culture. The Compensation Committee believes the emphasis on pay for performance in Geron's executive compensation program strongly aligns with the long-term interests of our stockholders. Please read the "Compensation Discussion and Analysis" section of this Proxy Statement for additional details about our executive compensation program, including information about the 2017 compensation of our Named Executive Officers.

Advisory Vote and Board Recommendation

We recommend stockholder approval of the 2017 compensation of our Named Executive Officers as disclosed in this Proxy Statement pursuant to the SEC's compensation disclosure rules, which disclosure includes the section entitled "Compensation Discussion and Analysis," and the compensation tables and accompanying narrative disclosures within the section entitled "Executive Compensation Tables and Related Narrative Disclosure" of this Proxy Statement.

Accordingly, the Board recommends that stockholders vote in favor of the following resolution:

"RESOLVED, that the stockholders approve, on a non-binding advisory basis, the compensation paid to Geron's Named Executive Officers, as disclosed in the Compensation Discussion and Analysis section, the tabular disclosure regarding such compensation and the accompanying narrative disclosure set forth in the Proxy Statement relating to the Company's 2018 Annual Meeting of Stockholders."

Approval of the above resolution requires the affirmative vote of the holders of a majority of the shares having voting power present in person or represented by proxy at the Annual Meeting. Abstentions will have the same effect as a vote against this proposal, and broker non-votes will have no effect on the outcome of this proposal.

As this is an advisory vote, the outcome of the vote is non-binding on us with respect to future executive officer compensation decisions, including those related to our Named Executive Officers, or otherwise. However, the Board and the Compensation Committee will review the results of the vote and take them into account when considering future executive officer compensation policies and decisions.

Unless the Board modifies its policy on the frequency of future advisory votes on the compensation of our named executive officers, the next advisory vote on the compensation of our named executive officers will be held at next year's annual meeting of stockholders.

The Board of Directors Unanimously Recommends
That Stockholders Vote FOR Proposal 2

COMPENSATION DISCUSSION AND ANALYSIS

This Compensation Discussion and Analysis section presents and discusses executive compensation policies and practices and the compensation decisions relating to our "Named Executive Officers" (as defined below) for the 2017 fiscal year, and includes the following:

- an executive summary of the business activities which influenced 2017 compensation decisions and important features of our executive compensation program;
- philosophy, objectives and key elements of our executive compensation program;
- process for setting executive compensation, including the role of the Compensation Committee, management and independent compensation consultant;
- a detailed discussion and analysis of the Compensation Committee's specific decisions about 2017 compensation for our Named Executive Officers; and
- a description of other compensation considerations and practices.

In addition to the historical information contained herein, this Compensation Discussion and Analysis also contains forward-looking statements based on current plans, considerations, expectations and determinations regarding future compensation decisions. The actual executive compensation program that we adopt in the future may differ materially from the current executive compensation program summarized in this discussion.

The following executive officers are collectively referred to herein as our Named Executive Officers:

- Dr. John A. Scarlett, President and Chief Executive Officer;
- Ms. Olivia K. Bloom, Executive Vice President, Finance, Chief Financial Officer and Treasurer;
- Ms. Melissa A. Kelly Behrs, Executive Vice President, Business Development and Portfolio & Alliance Management;
- Dr. Andrew J. Grethlein, Executive Vice President, Development and Technical Operations; and
- Mr. Stephen N. Rosenfield, Executive Vice President, General Counsel and Corporate Secretary.

Executive Summary

Business Highlights that Impacted 2017 Compensation Decisions

In 2017, executive compensation decisions continued to be influenced by retention challenges stemming from the significant uncertainty relating to our future operations, given: (i) that we are wholly dependent on our collaboration with Janssen Biotech, Inc. ("Janssen") to further develop, manufacture and commercialize imetelstat, which was our sole product candidate; and (ii) the unknown outcome of our efforts to identify and acquire and/ or in-license other oncology products, product candidates, programs or companies to grow and

diversify our business. In addition, the marketplace for qualified executive officers with broad experience in a small company environment remained highly competitive in the San Francisco Bay Area due in part to the robust growth in both the technology and biopharmaceutical industries, including as a result of numerous companies going public.

Our corporate goals for 2017 primarily focused on collaborating with Janssen to further the imetelstat program through active engagement with Janssen on the clinical development decision-making for the IMbark and IMerge clinical trials, and developing our own contingency plans to prepare us to resume imetelstat clinical development in the event that Janssen elects to discontinue the program. In addition, in 2017, corporate development activities continued to focus on efforts to identify and evaluate potential oncology product candidates, programs or companies to grow or diversify our business through acquisition and/or in-licensing, and we conducted due diligence for a number of potential targets. The Compensation Committee and the independent members of the Board (the "Independent Board"), evaluated our achievements in 2017 and determined that we achieved 100% of our 2017 corporate goals. The Compensation Committee and the Independent Board also determined that our Named Executive Officers, including our Chief Executive Officer, contributed significantly towards accomplishing these corporate goals, as well as successfully leading individual, team, departmental and functional performance and achievements. For details regarding our 2017 corporate goal achievements, see the sub-section entitled "Compensation Discussion and Analysis – 2017 Corporate Goal Achievement Factor."

Important Features of Our Executive Compensation Program

The Compensation Committee has structured our executive compensation program to ensure that our Named Executive Officers are compensated in a manner consistent with stockholder interests, competitive pay practices and applicable requirements of regulatory bodies. The following are important features of the design and operation of our executive compensation program:

- *Emphasis on Pay for Performance.* A significant portion of our Named Executive Officers' total compensation is variable, at risk and tied directly to performance measured and assessed annually by our Compensation Committee and Independent Board. The annual performance-based bonuses and long-term incentive awards represent at-risk elements of compensation and comprise approximately 74% of the total compensation of our Chief Executive Officer, Dr. Scarlett, as reported in the "Summary Compensation Table." As in prior years, in 2017, Dr. Scarlett's annual performance-based bonus was entirely contingent upon the Company's level of achievement of its corporate goals. The annual performance-based bonus for our other Named Executive Officers is also contingent upon the Company's level of achievement of its corporate goals, in addition to each executive officer's level of achievement of his/her respective individual goals and demonstration of our corporate values. Our annual performance-based bonus plan does not entitle or guarantee any minimum bonuses to our Named Executive Officers, including our Chief Executive Officer, and none of our employment agreements with our Named Executive Officers, including our Chief Executive Officer, contain multi-year guarantees for salary increases, or non-performance based guaranteed bonuses or equity compensation.
- *Long-Term Incentive Awards.* Long-term incentive awards for 2017 consisted solely of stock options, which provide value only if the market price of our Common Stock increases, and then only if the executive officer continues in our employment.
- *Internal Pay Equity Among Executives.* For 2017, the total cash compensation for our Chief Executive Officer, Dr. Scarlett, was approximately two and one-half times the average total cash compensation of our other Named Executive Officers, which reflects internal fairness and an important element designed to avoid excessive compensation of the Chief Executive Officer.
- *Clawback Terms.* Our executive officer employment agreements require that an executive officer forfeit his/her entire annual performance-based bonus if we determine that such executive officer has engaged in any misconduct intended to affect the payment of his/her annual performance-based

bonus, or has otherwise engaged in any act or omission that would constitute cause for termination of his/her employment, as defined by his/her employment agreement.

- *No Tax Gross-Ups on Compensation.* None of our Named Executive Officers receive tax related gross-ups on any element of compensation.
- *No Defined Retirement Benefits.* We do not offer any defined benefit pension plans or health benefits during retirement.
- *Limited Personal Benefits.* Our Named Executive Officers are eligible for the same benefits as non-executive, salaried employees, and do not receive any personal benefits, other than reimbursements for housing costs and travel expenses for our Chief Executive Officer, Dr. Scarlett, for the commute from his principal residence in Texas to our headquarters in Menlo Park, California.
- *No Hedging or Pledging.* Our Insider Trading Policy prohibits employees from engaging in speculative trading activities, including hedging or pledging company securities as collateral. Accordingly, our employees, including our Named Executive Officers, may not hedge the economic risk of, or pledge ownership of, our Common Stock.
- *Prohibition on Option Repricing.* Our equity plans, including the proposed 2018 Plan, do not permit repricing underwater stock options without stockholder approval.
- *Objective Compensation Program Oversight.* Our executive compensation program is administered by the Compensation Committee which is comprised entirely of independent non-employee directors.
- *Independent Compensation Consultant Advice.* The Compensation Committee engages, on an annual basis, an experienced, independent compensation consultant who reports directly to the Compensation Committee to advise on cash and equity executive compensation matters. In 2017, as in past years, the Compensation Committee engaged Radford to advise it on executive compensation.
- *Compensation Risk Management.* The Compensation Committee annually reviews our executive compensation program to ensure that the program design avoids inappropriate risk taking by our Named Executive Officers.

Effect of Stockholder Advisory Vote on Executive Compensation

At our 2017 Annual Meeting of Stockholders, we sought an advisory vote from our stockholders regarding the compensation of our named executive officers. The 2017 "say-on-pay" proposal was approved, with approximately 78.8% of the votes cast supporting the proposal. The Compensation Committee considered the outcome of the 2017 advisory vote and directed management to evaluate the reports and analyses issued by two proxy advisory firms, Institutional Shareholders Services (ISS) and Glass Lewis, to identify any executive compensation practices deemed problematic by such firms. The analyses performed by ISS and Glass Lewis noted that our pay and performance were reasonably aligned and the structure of our executive compensation program and the disclosures in our 2017 proxy statement were fair. Both analyses noted the lack of performance-vesting long-term equity awards and the existence of single-trigger equity vesting acceleration in our current executive compensation program, and the Glass Lewis report also noted the absence of executive stock ownership requirements. However, these firms did not view these provisions as dispositive, and therefore, both recommended that stockholders vote "FOR" our 2017 say-on-pay proposal. The Compensation Committee considered the 2017 ISS and Glass Lewis recommendations and decided not to adopt them in order to enable the Company to remain competitive and to attract and retain skilled biotechnology personnel in the San Francisco Bay Area. Among biotechnology companies and other entrepreneurial companies in the San Francisco Bay Area, time-based vesting for equity awards, single-trigger change-in-control provisions related to equity awards and the lack of stock ownership guidelines are common compensation practices. As a result of the foregoing, in connection with its annual review of each pay element and the compensation packages provided to our Named Executive Officers, the Compensation Committee did not make any changes to Geron's executive compensation program for 2017.

Our Executive Compensation Program

Philosophy and Objectives

We believe that the leadership of our current executive team has been essential to our success. Because of the high demand in the marketplace for skilled biotechnology human resources in the San Francisco Bay Area, national and local pharmaceutical and biopharmaceutical companies have aggressively recruited our Named Executive Officers and other skilled employees. In addition, our industry is highly scientific, clinical, regulated and dynamic, which requires an executive team that is exceptionally educated, dedicated and experienced. In light of these circumstances, our executive compensation program serves to help attract, motivate and retain our Named Executive Officers to manage our business, creating long-term stockholder value while recognizing the importance of linking rewards to performance and aligning the interests of stockholders and executive officers. There may be circumstances where the volatility of our business may result in highly variable compensation during any given period. We also believe that the work of the Named Executive Officers toward accomplishment of our corporate goals is highly collaborative and team-oriented, requiring each Named Executive Officer to perform duties and responsibilities outside those of his or her job title, as such job titles are commonly understood in the industry. In light of the highly collaborative teamwork of the Named Executive Officers and the benefit we believe is conveyed to the Company by retaining the team intact, the Compensation Committee has therefore determined that internal pay equity among the executive team is a key factor in compensation decisions.

Our executive compensation program has the following objectives:

- to pay appropriate cash and equity compensation to executive officers for retention purposes during periods of significant uncertainty;
- to attract and retain experienced executive officers by incentivizing them with competitive cash and non-cash compensation opportunities while allowing the Company to maintain a fiscally responsible position;
- to foster pay for performance philosophy by rewarding executive officers only upon successful achievement of individual and corporate goals; and
- to align the interests of executive officers with stockholders by motivating executive officers to focus on effectively attaining key corporate strategic and financial objectives that will drive long-term stockholder value.

Components

The components of our executive compensation program consist primarily of elements that are available to all employees, including base salary, annual performance-based bonuses, equity awards and broad-based benefits. To help retain and motivate our Named Executive Officers, we target total compensation that is competitive with the San Francisco Bay Area employment market through the utilization of a mix of cash (base salaries and annual performance-based bonuses) and long-term incentives (equity awards). “Total compensation” referred to in this Compensation Discussion and Analysis consists of annual base salary, annual performance-based bonus and the grant date fair value of equity awards as reported in the sub-section entitled “Summary Compensation Table.”

Base Salary (Fixed Cash Compensation)

Base salaries provide financial stability and security through a fixed amount of cash for performing daily responsibilities. Generally, any increase in base salary beyond a cost of living increase indicates that an individual’s salary is less than the referenced market data range of the 50th to 75th percentile, or, as applicable, reflects changes in responsibilities or position, recognizes the individual’s performance during the past year, acknowledges the individual’s criticality to our future plans and maintains internal pay equity amongst our Named Executive Officers. Increases in base salary typically are effective as of January 1st of each calendar year. For further discussion of the evaluation of individual Named Executive Officer base salaries, see the sub-section entitled “2017 Base Salaries.”

Annual Performance-Based Bonuses (At-Risk Cash Compensation)

Under our annual performance-based bonus plan, every employee, including each Named Executive Officer, has an established annual performance-based bonus target, which is equal to a percentage of the employee's base salary. This percentage increases as levels of responsibility and title increase. Each employee's actual earned annual performance-based bonus, if any, is predicated on the: (1) level of achievement of annual corporate goals as approved by our Independent Board (the "corporate goal achievement factor"), (2) level of achievement of individual goals (the "individual performance factor") and (3) level of display of corporate values (the "corporate values performance factor"), though our Chief Executive Officer's actual earned annual performance-based bonus is based entirely upon the level of achievement of our annual corporate goals. Our corporate values are authenticity, accountability, excellence, integrity and respect. The corporate goals in any year may relate to research, development and clinical activities, including in collaboration with Janssen; supporting our collaboration with Janssen; business development strategies and objectives; operational, hiring and retention objectives; managing expenses and budget-related objectives; improvements in or attainment of working capital levels; financing objectives and implementation or completion of projects or processes.

For more senior employees and our Named Executive Officers, the corporate goal achievement factor is weighted more heavily and thus has greater influence on the amount of an annual performance-based bonus that may be earned, as contributions from these individuals have a larger impact on corporate goal achievements. This practice is designed to create a direct link between executive compensation and achievement of strategic and financial objectives that will drive long-term stockholder value. None of our Named Executive Officers, including our Chief Executive Officer, are entitled to guaranteed or minimum bonuses under our annual performance-based bonus plan.

Calculation of annual performance-based bonuses for all employees, including our Named Executive Officers, generally occurs at the beginning of each calendar year based on performance of the prior year. Payment of annual performance-based bonuses typically occurs in the first quarter of the calendar year. For further discussion of the annual performance review process and calculation of individual Named Executive Officer annual performance-based bonuses, see the sub-section entitled "2017 Annual Performance-Based Bonuses."

Long-Term Incentives (At-Risk Equity Compensation)

Long-term incentives (equity awards) are designed to align executive officers' interests with stockholder interests; promote retention through the reward of long-term Company performance; and encourage employee ownership in Geron. We primarily use stock option grants that are subject to monthly time-based vesting over four years under our 2011 Plan as equity awards. The Compensation Committee believes that the use of stock option grants:

- strongly aligns the interests of our executive officers with those of our stockholders by placing a considerable proportion of our executive officers' total compensation "at risk" because it is contingent on the appreciation in value of our Common Stock;
- supports our pay for performance philosophy by tying their compensation to the achievement of specific and objective corporate goals that maximize long-term stockholder value;
- keeps the executive officers' total compensation opportunity competitive; and
- encourages our executive officers to remain in the long-term employ of our Company.

While we have not adopted formal stock ownership or holding guidelines, our Named Executive Officers generally have held a substantial portion of the equity awards they have received, even long after the awards have vested, which helps to maintain the alignment between the interests of our Named Executive Officers and those of our stockholders over the longer term.

Broad-Based Benefits

Geron offers a comprehensive array of benefits to its employees, including our Named Executive Officers. These include:

- comprehensive medical, dental, vision coverage and life insurance;
- a "cafeteria" plan administered pursuant to Section 125 of the Code, which includes Geron's medical and dental insurance, medical reimbursement, and dependent care reimbursement plans;
- a 401(k) plan, which is a retirement savings defined contribution plan established in accordance with Section 401(a) of the Code (in 2017, we provided a fully vested employer matching contribution in cash equal to 50% of each employee's annual contributions); and
- an Employee Stock Purchase Plan, which is implemented and administered pursuant to Section 423 of the Code.

Executive officers pay for 30% of their health premium cost, which is deducted from their gross salary. Other employees pay either 16% or 25% of their health premium cost. We do not offer any defined benefit pension plans or health benefits during retirement.

Process for Setting Executive Compensation

Role of the Compensation Committee

Appointed by our Board, Compensation Committee members are independent of management and meet the Nasdaq listing standards for independence. The Compensation Committee acts on behalf of the Board to oversee the compensation policies and practices applicable to all our employees, including the administration of our equity plans and employee benefit plans. Typically, the Compensation Committee meets at least once quarterly and with greater frequency if necessary. The agenda for each meeting is usually developed by the Chair of the Compensation Committee, in consultation with the Chief Executive Officer, Executive Director of Human Resources, General Counsel and the independent compensation consultant, Radford. The Compensation Committee also meets in executive session without the presence of any employees. Historically, the Compensation Committee makes decisions related to executive compensation after conducting multiple meetings during the fourth quarter of the calendar year and the first quarter of the ensuing year.

Role of Independent Compensation Consultant

The Compensation Committee actively reviews and assesses our executive compensation program in light of the highly competitive employment environment in the San Francisco Bay Area, the challenges of recruiting, motivating and retaining our Named Executive Officers in an industry with much longer business cycles than other commercial industries, and evolving compensation governance and best practices. To assist with this assessment, the Compensation Committee has the authority to retain special counsel and other experts, including compensation consultants, to support their responsibilities in determining executive officer compensation and related benefits. Since December 2011, the Compensation Committee has retained Radford, an Aon Hewitt Company, as its independent compensation consultant due to its extensive analytical and compensation expertise in the biotechnology and pharmaceutical industry. In this capacity, Radford has provided documentary support, including industry data from third-party salary survey sources, related to cash and equity compensation for executive officers and non-employee members of the Board. Although the Company pays the costs of Radford's services, the Compensation Committee has the sole authority to engage and terminate Radford's services, as well as to approve their compensation. Radford makes recommendations to the Compensation Committee, but it has no authority to make compensation decisions on behalf of the Compensation Committee or the Company. The Compensation Committee, at its discretion, may communicate and meet with Radford with no Geron employees present.

In February 2017, the Compensation Committee reviewed information from Radford about potential conflicts of interest and analyzed whether the work of Radford as a compensation consultant raised any conflict of interest, taking into consideration the following six factors:

(i) the provision of other services to Geron by Radford or any other Aon Hewitt Company;

(ii) the amount of fees Geron paid to Radford or any other Aon Hewitt Company as a percentage of the firm's total revenue;

(iii) Radford's policies and procedures that are designed to prevent conflicts of interest;

(iv) any business or personal relationship of Radford, any other Aon Hewitt Company or the individual compensation advisors employed by Radford with an executive officer of the Company;

(v) any business or personal relationship of the individual compensation advisors with any member of the Compensation Committee; and

(vi) any Geron Common Stock owned by the individual compensation advisors employed by Radford.

Based on these factors, the Compensation Committee determined that there were no conflicts of interest with respect to the provision of services by Radford to the Compensation Committee. In 2017, fees paid to Radford for their services as a compensation consultant to the Compensation Committee amounted to less than 1.0% of Radford's total revenue for the same period and were less than $120,000. In January 2018, the Compensation Committee performed a similar analysis of Radford's independence, and determined that there were no conflicts of interest with respect to the provision of services by Radford to the Compensation Committee.

For 2017, Radford provided the following services to the Compensation Committee:

- reviewed emerging trends and topics regarding executive compensation and non-employee director compensation;
- recommended the composition of companies for a defined peer group to reference in determining executive compensation;
- provided compensation data and practices related to executive officers for the defined peer group based on data from SEC filings and Radford's Life Sciences Survey;
- conducted a competitive review of the compensation of our Named Executive Officers, including advising on the design and structure of our equity awards; and
- prepared an analysis of share usage under our equity incentive plan in comparison to the defined peer group based on data from SEC filings.

Role of Management

To aid the Compensation Committee in its responsibilities, during the first quarter of each year, the Chief Executive Officer, with assistance from the General Counsel and Executive Director of Human Resources, provides the Compensation Committee with recommendations relating to the level of achievement of our corporate goals. In addition, the Chief Executive Officer presents to the Compensation Committee written assessments of the performance and achievements, including support of our corporate values, for each of the Named Executive Officers (other than himself) for the prior year and recommends the individual performance factor and the corporate values performance factor for each executive officer (other than himself). The Compensation Committee gives considerable weight to the Chief Executive Officer's performance evaluations of the other Named Executive Officers, since he has direct knowledge of the criticality of their work, performance and contributions. The Compensation Committee does not consult with any other executive officer with regard to its decisions. The Compensation Committee reviews the individual performance factor and the corporate values performance factor for each of the Named Executive Officers (other than the Chief Executive Officer) and adjusts the factors as necessary prior to approval. The Chief Executive Officer does not participate

in the Compensation Committee's or Board's deliberations or decisions with regard to his own compensation, which is approved by the Independent Board.

Use of Market Data and Peer Group Analysis

When considering executive compensation decisions, the Compensation Committee believes it is important to be informed as to current compensation practices of comparable publicly held companies in the life sciences industry, especially to understand the demand and competitiveness for attracting and retaining an individual with each Named Executive Officer's specific expertise and experience.

In November 2016, based on the recommendation of Radford, the Compensation Committee determined that a defined peer group was appropriate to reference in connection with making 2017 executive officer compensation decisions. With the assistance of Radford, the Compensation Committee considered several factors in determining the companies to be included in the defined peer group for 2017 executive compensation decisions, including stage of development, market capitalization, number of employees, public status and length of time being public, primary location of operations and level of research and development expenditures and revenue. The following companies were identified by the Compensation Committee as the defined peer group for 2017 executive compensation decisions:

Achillion Pharmaceuticals, Inc.	Dynavax Technologies Corporation	NewLink Genetics Corporation
Advaxis, Inc.	Idera Pharmaceuticals, Inc.	Rigel Pharmaceuticals, Inc.
Array BioPharma Inc.	Immunomedics, Inc.	Sangamo Therapeutics, Inc.
Celldex Therapeutics, Inc.	Insmed Incorporated	TG Therapeutics, Inc.
ChemoCentryx, Inc.	La Jolla Pharmaceutical Company	ZIOPHARM Oncology, Inc.
Cytokinetics, Incorporated	MediciNova, Inc.	

In December 2016, these peer group companies had a 30-day average median market capitalization of $451.9 million and a median number of 106 employees based on their most recent annual reports, compared to our 30-day average market capitalization of $330.2 million and 18 employees. The market data supplied by Radford for the defined peer group provides information on the total compensation paid to executive officers in comparable positions and responsibilities. In 2017, as in prior years, the Compensation Committee believes referencing Radford's market data, along with other factors, is important when setting total compensation for our Named Executive Officers because competition for executive management is intense in our industry and in our geographic area, and continued leadership from our Named Executive Officers is critical to our success. However, while referencing the peer group compensation levels is helpful in determining market-competitive compensation for our Named Executive Officers, it is only one component in determining executive officer compensation, and the Compensation Committee has discretion in determining the nature and extent of its use.

Setting Base Salaries

The Compensation Committee (or the Independent Board based on recommendation from the Compensation Committee, with respect to the Chief Executive Officer), in consultation with Radford, sets base salaries for our Named Executive Officers when they join our Company or upon promotion. In addition, at the beginning of each calendar year, the Compensation Committee, in consultation with Radford, reviews and determines base salaries for our Named Executive Officers (or the Independent Board with respect to our Chief Executive Officer, upon recommendation from the Compensation Committee). The Compensation Committee (or the Independent Board with respect to our Chief Executive Officer, upon recommendation from the Compensation Committee) considers various factors in determining whether any base salary adjustments are necessary. These factors typically include an evaluation of each executive officer's position and specific responsibilities, individual performance, level of experience and criticality to our future plans, achievement of corporate and strategic goals, an analysis of compensation among other executive officers to maintain internal pay equity, and a review of competitive salary information, total compensation market data, and cost of living

increases in the San Francisco Bay Area. The Compensation Committee does not apply any specific formulas in determining increases in base salaries for our Named Executive Officers.

Assessing Annual Corporate Performance

At the beginning of each calendar year, the Chief Executive Officer develops, with input from our Named Executive Officers, our corporate goals, which generally relate to our strategic and financial objectives, together with recommended weightings for each goal. The weighting for each corporate goal depends on its importance and business value for Geron and our stockholders. The Chief Executive Officer submits the corporate goals and recommended weightings to the Compensation Committee and the Independent Board for their review and approval. The Compensation Committee and Independent Board review the corporate goals and weightings and modify them as necessary prior to approval.

During the first quarter of the year, as part of the annual year-end performance review process, the Compensation Committee evaluates our achievement of the corporate goals for the preceding year. To aid the Compensation Committee in its responsibilities, the Chief Executive Officer, with assistance from the General Counsel and Executive Director of Human Resources, provides the Compensation Committee with recommendations relating to the achievement of our annual corporate goals, known as the corporate goal achievement factor. The Compensation Committee does not use a rigid formula to determine the corporate goal achievement factor, and to date, has not established a minimum threshold or maximum value that may be potentially realized for the corporate goal achievement factor. The corporate goal achievement factor generally ranges from 0 to 1.0. The Compensation Committee evaluates the corporate goal achievement factor, and recommends the corporate goal achievement factor to the Independent Board, which has the final approval. To evaluate the corporate goal achievement factor, the Compensation Committee and Independent Board consider the following:

- the degree of success in achieving each corporate goal;
- the degree of difficulty in achieving the corporate goal;
- whether significant unforeseen obstacles or favorable circumstances altered the expected difficulty of achieving the desired results;
- other conditions that may have made the stated goal more or less important to our success; and
- any other significant company accomplishments not included in the formal goals, but nonetheless deemed important to our near- and long-term success.

The Compensation Committee recommends the corporate goal achievement factor to the Independent Board, which considers the recommendation of the Compensation Committee and may accept or modify such recommendation before approval. The Independent Board has the discretion to approve a corporate goal achievement factor above 1.0 in extraordinary circumstances where it determines such an increase is warranted.

Determining Equity Grants

The Compensation Committee (and the Independent Board, with respect to our Chief Executive Officer, based on recommendations from the Compensation Committee), in consultation with Radford, determines the size of any stock option grant according to each executive officer's position. To do so, the Compensation Committee considers numerous factors and has the discretion to give relative weight to each of these factors as it sets the size of the stock option grant to appropriately create an opportunity for reward based on increasing stockholder value. There is no set formula for the granting of stock options or other equity awards to employees, including our Named Executive Officers. For further discussion of the process in determining stock option grants to our Named Executive Officers in 2017, see the sub-section entitled "2017 Equity Awards."

Equity Grant Practices

Our general policy is to grant stock options and other equity awards on fixed dates determined in advance. All required approvals are obtained in advance of or on the actual grant date. The exercise price of all stock option grants, including to executive officers, is equal to the closing price of Geron Common Stock as reported by the Nasdaq Global Select Market on the date of grant. Geron's standard vesting schedule for the first stock option grant awarded to newly hired employees, including executive officers, provides that 12.5% of the shares granted will vest six months after the date of the grant, and the remaining shares will vest in equal monthly installments over the following 42 months, so that vesting is complete four years from the date of grant, provided the employee continues to provide services to the Company during that time. Additional option grants made after an employee, including an executive officer, has provided services to the Company for more than six months generally vest monthly from the date of grant over four years.

The Compensation Committee grants equity awards to newly hired and existing executive officers, except the Chief Executive Officer, with respect to whom the Independent Board determines equity awards based on the recommendation of the Compensation Committee. Other than stock option grants to new hires, stock option grants to all employees, including executive officers, are generally approved once a year (typically near the beginning of the year) unless an executive officer is promoted, in which case a grant will normally be made at the time of such promotion, or, in rare circumstances, for recognition of outstanding performance.

We recognize that a release of information in close proximity to an equity award grant may appear to be an effort to time the announcement to a grantee's benefit (even if no such benefit was intended). Accordingly, we have a general practice whereby if the Compensation Committee (or the Independent Board, in the case of the Chief Executive Officer) approves annual equity awards to our executive officers (and other employees) when our trading window is closed, then such annual equity awards will be granted on the second trading day following our trading window re-opening. This practice is intended to allow the market to absorb the undisclosed financial and other information that resulted in the closure of the trading window, so the market price of our Common Stock reflects our then-current results and prospects at the time the annual equity award is granted and the exercise price is set. As a result, the timing of annual equity awards to our continuing executive officers is not coordinated in a manner that intentionally benefits our executive officers.

Allocating Amongst Compensation Components

The Compensation Committee does not have any formal policies for allocating total compensation among the various components of the executive compensation program. Instead, the Compensation Committee uses its judgment, in consultation with Radford, to establish a mix of current, short-term and long-term incentive compensation, and cash and equity compensation for each Named Executive Officer. In setting the annual level of total compensation for our Named Executive Officers, the Compensation Committee considers various factors, which typically include:

- defined peer group market data provided by Radford;
- corporate performance;
- our level of achievement of our corporate goals;
- internal pay equity among Named Executive Officers;
- each executive officer's individual performance;
- the criticality of each executive officer's skill set, and the need to retain such skills;
- executive officer stock ownership information;
- analyses of historical executive officer compensation levels and current company-wide compensation levels; and
- trends for executive compensation for our industry.

Each of these factors is balanced against Geron's financial resources and ability to award cash and equity incentives.

Compensation Decisions in 2017

2017 Base Salaries

The Compensation Committee believes base salaries should be consistent with the base salaries provided by companies in our defined peer group. In the first quarter of 2017, the Compensation Committee performed its annual analysis of base salaries for all of our Named Executive Officers using the defined peer group market data provided by Radford. The market data analysis showed that at the end of 2016, the base salary of four of our Named Executive Officers was at or above the 75th percentile of the defined peer group market data provided by Radford, and the base salary of Ms. Bloom was at the 60th percentile of the defined peer group market data provided by Radford. The Compensation Committee concluded, with respect to each Named Executive Officer whose base salary was at or above the 75th percentile of the defined peer group market data provided by Radford, that such base salary appropriately reflected the broad responsibilities of each Named Executive Officer and the level of difficulty required to achieve the individual and corporate goals for 2017. In addition to the market data analysis, the Compensation Committee considered a number of other factors, including:

- the individual performance of each Named Executive Officer in 2016;
- internal pay equity among the Named Executive Officers;
- tenure, experience, skills and responsibilities of each Named Executive Officer;
- managerial leadership exhibited by each Named Executive Officer;
- expected cost of living increases in the San Francisco Bay Area;
- overall Company performance; and
- the anticipated level of difficulty in replacing an executive officer with someone of comparable experience and skill, especially given significant uncertainty relating to our future operations.

Given the collaborative team-oriented effort and broad job responsibilities of our Named Executive Officers, and therefore, the desire for internal pay equity among the executive team, and based on guidance provided by Radford as to an appropriate cost of living adjustment, the Compensation Committee and, with respect to Dr. Scarlett, the Independent Board, approved a cost of living base salary adjustment of 3.5% for four of our Named Executive Officers for 2017. The Compensation Committee adjusted the base salary of Ms. Bloom by 5.9% to be in line with the 75th percentile of the defined peer group market data provided by Radford. In reaching this decision, the Compensation Committee considered the extensiveness of Ms. Bloom's responsibilities, the comprehensive fulfillment of these responsibilities by Ms. Bloom and the desire to maintain internal pay equity among the other Named Executive Officers.

The following 2017 base salaries for our Named Executive Officers were effective as of January 1, 2017.

Named Executive Officer	2016 Base Salary	Salary Increase (%)	2017 Base Salary
John A. Scarlett, M.D.	$ 622,200	3.5%	$ 644,000
Olivia K. Bloom	$ 387,200	5.9%	$ 410,000
Melissa A. Kelly Behrs	$ 373,400	3.5%	$ 386,500
Andrew J. Grethlein, Ph.D.	$ 402,100	3.5%	$ 416,200
Stephen N. Rosenfield, J.D.	$ 413,750 (1)	3.5%	$ 428,300 (1)

(1) We employ Mr. Rosenfield at 80% full-time equivalent. Thus, the actual base salary paid to Mr. Rosenfield is 80% of the amounts presented in the table.

2017 Annual Performance-Based Bonuses

Named Executive Officers' 2017 annual performance-based bonus targets, as a percentage of base salary, as shown in the table below, remained at the same historical levels that we have applied since 2010. The defined peer group market data provided by Radford showed the annual performance-based bonus targets for each of our Named Executive Officers in 2017 were above the 75th percentile, except for the CEO whose bonus target fell between the 50th and 75th percentile of the defined peer group data provided by Radford. The Compensation Committee determined that these 2017 targets were appropriate in light of the functions for which our Named Executive Officers were accountable to ensure achievement of our 2017 corporate goals, and strengthened our ability to retain our Named Executive Officers in a competitive job market.

The table below summarizes the annual performance-based bonus targets as a percentage of annual salary for each of our Named Executive Officers for 2017.

Named Executive Officer	Annual Incentive Bonus Target as a % of Salary
John A. Scarlett, M.D.	60%
Olivia K. Bloom	45%
Melissa A. Kelly Behrs	45%
Andrew J. Grethlein, Ph.D.	45%
Stephen N. Rosenfield, J.D.	45%

In keeping with of our pay for performance philosophy, the amount of an annual performance-based bonus that can be earned by each Named Executive Officer is variable and at risk due to its dependency on the performance of the individual and the overall Company. Consistent with prior years, for 2017, other than Dr. Scarlett, each Named Executive Officer's annual performance-based bonus was contingent on the following: 50% upon the level of achievement of our corporate goals, 30% upon the level of achievement of individual goals, and 20% upon individual support and manifestation of our corporate values. Dr. Scarlett's annual performance-based bonus was 100% contingent upon the level of achievement of our corporate goals.

2017 Corporate Goal Achievement Factor

The table below summarizes the corporate goals approved by the Independent Board for 2017, including assigned weightings, and the Compensation Committee's and Independent Board's assessment of the level of achievement of those goals for 2017. The corporate goals for 2017 primarily focused on collaborating with Janssen to further develop the imetelstat program through active engagement with Janssen on the clinical development decision-making for the IMbark and IMerge clinical trials, and establishing our own contingency plans to prepare us to resume imetelstat clinical development should Janssen elect to discontinue the program. In addition, in 2017, our corporate development activities continued to focus on efforts to identify and evaluate potential oncology product candidates, programs or companies to grow or diversify our business through acquisition and/or in-licensing, and we conducted due diligence for a number of potential targets. Based on the achievements noted below, the Independent Board deemed these corporate goals to be 100% achieved in 2017.

2017 Corporate Goals	Weighting (A)	Highlights of Company Performance	Percentage Achievement (B)	Total (A x B)
1) Achieve continued development of imetelstat by Janssen	30%	• As of December 31, 2017, Janssen maintained exclusive worldwide rights to imetelstat. Janssen is currently conducting two clinical trials of imetelstat: IMbark, a Phase 2 trial in myelofibrosis ("MF"), and IMerge, a Phase 2/3 trial in myelodysplastic syndromes ("MDS"). Clinical development highlights in 2017 from the imetelstat program include: o Fast-track designation was granted by the United States Food and Drug Administration ("FDA") in October 2017 to imetelstat for the treatment of adult patients with transfusion dependent anemia due to Low or Intermediate-1 risk MDS who are non-del(5q) and who are refractory or resistant to treatment with an erythropoiesis stimulating agent. o Preliminary data from Part 1 of IMerge was presented at the American Society of Hematology Annual Meeting ("ASH") in December 2017. • In April 2017, Janssen conducted internal data reviews of IMbark and IMerge. Subsequent to these reviews, the following actions were taken: o For IMbark, patients remaining in the treatment phase could continue to receive imetelstat and all safety and efficacy assessment were being conducted as planned in the protocol, including following patients, to the extent possible, until death to enable an assessment of overall survival. However, no new patients are being enrolled into the trial. o For IMerge, enrollment in Part 1 was expanded to enroll approximately 20 additional patients who are non-del(5q) and naïve to hypomethylating agent and lenalidomide treatment to increase the experience and confirm the benefit-risk profile of imetelstat in this refined patient population.	100%	30%

2017 Corporate Goals	Weighting (A)	Highlights of Company Performance	Percentage Achievement (B)	Total (A x B)
2) Actively engage Janssen in program oversight and joint decision making	20%	In 2017, our collaborative activities with Janssen related to the imetelstat program included: • We actively participated in numerous steering committee and working group meetings monitoring all aspects of the imetelstat development program, including clinical operations, regulatory interactions, manufacturing activities, preclinical research, medical affairs, commercial planning, external communications, intellectual property protection and financial reporting. • We reviewed information from internal data reviews for IMbark and IMerge. • We reviewed regulatory filings made by Janssen related to imetelstat, including Janssen's fast-track designation application and response to the FDA's request for more information related to IMbark. • We reviewed and approved multiple publication requests from Janssen and other authors, including the poster presentation of IMerge Part 1 data at ASH. • We reviewed and approved Janssen's protocol amendment related to the expansion of enrollment for Part 1 of IMerge. • We ensured ongoing intellectual property protection for imetelstat.	100%	20%
3) Establish high-level R&D contingency operating plans in connection with various imetelstat development scenarios.	15%	• We prepared plans in order to prepare us to resume imetelstat clinical development in the event of a discontinuation of the program by Janssen, including operational execution strategies and timing, resource planning needs and financing requirements to implement such development plans. • We presented our findings and conclusions to the Board.	100%	15%
4) Complete U.S. qualitative market research interviews for imetelstat in lower risk MDS by December 31, 2017.	5%	• We engaged a nationally-recognized market research company to conduct an independent opportunity assessment for imetelstat in lower risk MDS. • We participated in the development of an imetelstat target product profile and discussion guides to be used for	100%	5%

2017 Corporate Goals	Weighting (A)	Highlights of Company Performance	Percentage Achievement (B)	Total (A x B)
		interviews with numerous hematologist oncologists in the U.S., Canada and Europe (qualitative interviews). • We reviewed data gathered from qualitative interviews to summarize and interpret feedback for presentation of findings and conclusions to the Board.		
5) Develop business development strategies/criteria to identify potential acquisition candidates.	15%	• We developed search criteria for suitable acquisition candidates, after consideration of our resources and potential imetelstat development outcomes. • We conducted initial triage and screened potential acquisition opportunities using defined criteria. • We completed preliminary assessments of potential acquisition opportunities, resulting in deeper scientific, clinical and financial diligence of several companies. • We presented findings and conclusions to the Board.	100%	15%
6) Conduct due diligence review of at least two acquisition and/or in-license opportunities by December 31, 2017, unless otherwise superseded by conclusion of a transaction.	10%	• We performed in-depth due diligence of five acquisition candidates in 2017. • We presented findings and conclusions to the Board as each evaluation was completed.	100%	10%
7) Manage expenditures to Board-approved budget.	5%	• We controlled expenses to be in line with established budget, maintaining sufficient cash resources to support business development search efforts and collaborative development of imetelstat.	100%	5%
Total	100%			100%

2017 Individual Performance and Corporate Values Performance Factors

As discussed in further detail below, each Named Executive Officer's 2017 individual performance factor was assessed not only in light of personal performance in accomplishing individual, team, departmental and functional goals and objectives, but also the overall performance of the functional areas for which the executive officer has responsibility, the manner in which the executive officer contributes to the overall success of the Company, including areas outside of his or her responsibility, and the overall management of the executive officer's staff. Each Named Executive Officer's individual corporate values performance factor was based on actions during 2017 demonstrating his or her full support and manifestation of our corporate values. Using the evaluations conducted by the Chief Executive Officer, the Compensation Committee determined the actual individual performance factor for each of our Named Executive Officers (other than the Chief Executive Officer) for 2017 to be either 1.25 or 1.3 and the actual corporate values performance factor to be 1.0.

2017 Individual Achievements

Consistent with prior years, Dr. Scarlett's 2017 annual performance-based bonus was structured to be 100% contingent on the level of corporate goal achievement. Accordingly, with the Independent Board approval of the corporate goal achievement factor of 100% and Dr. Scarlett's direct responsibility and contributions for the achievement of such goals, the Compensation Committee recommended, and the Independent Board approved that Dr. Scarlett should receive 100% of his 2017 target annual performance-based bonus.

Ms. Bloom was awarded an individual performance factor of 1.3 and a corporate values performance factor of 1.0 based on the achievements and contributions made by Ms. Bloom during 2017. In 2017, Ms. Bloom:

- supervised and controlled the Accounting/Finance function to ensure compliance with SEC, Nasdaq and PCAOB requirements, including maintenance of internal control over financial reporting;
- effectively reviewed and negotiated company expenses to remain within the budgeted spending level for 2017;
- directed and managed the Investor Relations function to maintain investor interest and key analyst coverage despite patient enrollment suspension in the IMbark trial and a lack of regularly reported data in the first part of 2017;
- supported business development efforts by performing due diligence on potential acquisition opportunities with specific emphasis on corporate structure and governance, employee compensation policies and change in control provisions, capitalization, investors and financial projections; and
- guided the communications working group with Janssen and developed a communication plan regarding the imetelstat second internal data reviews and resulting outcomes that aligned timelines and messaging amongst various stakeholders.

Ms. Behrs was awarded an individual performance factor of 1.3 and a corporate values performance factor of 1.0 based on the achievements and contributions made by Ms. Behrs during 2017. In 2017, Ms. Behrs:

- played key leadership role as a member of the imetelstat governance committees with Janssen to ensure active monitoring of progress versus key program goals, including providing strategic input in connection with clinical development plans, publication planning, and regulatory filings;
- led the efforts for conducting an independent market research study of imetelstat in lower risk MDS, including selecting the company performing the independent market research study, developing an imetelstat target product profile and discussion guides for qualitative interviews and assessing feedback from those interviews;
- led the business development efforts to search for and evaluate potential acquisition opportunities, including developing criteria for suitable acquisition candidates, scouting and screening at partnering meetings and oncology-focused scientific/medical meetings and directing a multi-disciplinary technical team to triage, consider and evaluate potential acquisition candidates; and
- served as lead contact for potential acquisition candidates, including preparing and negotiating terms of due diligence, confidentiality and possible transaction economics.

Dr. Grethlein was awarded an individual performance factor of 1.3 and a corporate values performance factor of 1.0 based on the achievements and contributions made by Dr. Grethlein during 2017. In 2017, Mr. Grethlein:

- directed and managed a multi-disciplinary team to develop clinical development plans for imetelstat in lower risk MDS, including feasible approaches to efficiently and effectively undertake oversight of global clinical operations, regulatory affairs, manufacturing, pharmacovigilance, biostatistics and

quality systems, in order to prepare us to resume imetelstat clinical development in the event of a discontinuation of the program by Janssen;

- played a key leadership role as a member of the imetelstat governance committees with Jansen in connection with clinical assessment of information from second internal data reviews for IMbark and IMerge, including implications on clinical development strategies;
- provided scientific and clinical development insight and support in formulating asset criteria for potential acquisition candidates; and
- led the technical due diligence efforts for multiple potential acquisition candidates and directed technical experts to evaluate prospective clinical applications for each of the lead programs and technology platforms and the possible competitive landscapes.

Mr. Rosenfield was awarded an individual performance factor of 1.25 and a corporate values performance factor of 1.0 based on the following achievements and contributions made by Mr. Rosenfield during 2017. In 2017, Mr. Rosenfield:

- served as a strategic business advisor to management and the Board by providing critical legal and business expertise in evaluating potential acquisition candidates and possible business plans for imetelstat in lower risk MDS;
- led and managed corporate governance compliance through administration of meetings of the Board and the Compensation Committee and Nominating and Corporate Governance Committee, including drafting of minutes and agendas and overseeing Board and committee self-evaluations;
- performed comprehensive and timely review of all public disclosure documents, including SEC filings, press releases, investor and business development presentations and conference call scripts, for completeness, accuracy and comprehension;
- supervised the Human Resources function, including review and analysis of compensation elements for employees and non-employee directors to ensure competitiveness in the biotechnology industry for the San Francisco Bay Area marketplace; and
- supervised the Legal function, including driving successful settlement negotiations for purported securities class action lawsuits and derivative lawsuits, overseeing imetelstat intellectual property protection under the Janssen collaboration and supporting business development activities through due diligence of legal matters for potential acquisition candidates.

Following are the annual performance-based bonus targets and weighting percentages for each of the factors used to calculate the 2017 annual performance-based bonus for each of our Named Executive Officers as well as the 2017 actual bonus percentage awarded.

Named Executive Officer	(A) Annual Incentive Bonus Target as a % of Salary	(B) Corporate Goal Achievement Weighting	(C) 2017 Corporate Goal Achievement Factor	(D) Individual Performance Weighting	(E) 2017 Individual Performance Factor	(F) Corporate Values Weighting	(G) 2017 Corporate Values Performance Factor	= (A*B*C) + (A*D*E) + (A*F*G) Annual Incentive Bonus Awarded as a % of Salary
John A. Scarlett, M.D.	60%	100%	1.0	N/A	N/A	N/A	N/A	60.0%
Olivia K. Bloom	45%	50%	1.0	30%	1.30	20%	1.0	49.1%
Melissa A. Kelly Behrs.....	45%	50%	1.0	30%	1.30	20%	1.0	49.1%
Andrew J. Grethlein, Ph.D.	45%	50%	1.0	30%	1.30	20%	1.0	49.1%
Stephen N. Rosenfield, J.D.....	45%	50%	1.0	30%	1.25	20%	1.0	48.4%

2017 Equity Awards

Consistent with the objectives of our executive compensation program to link pay with performance, align the interests of stockholders and employees, and encourage employee ownership in Geron, in February 2017, the Compensation Committee approved stock option grants to our Named Executive Officers, and the Independent Board approved a stock option grant to our Chief Executive Officer. In determining the appropriate size and value of stock option grants in 2017 for our Named Executive Officers, the Compensation Committee (and the Independent Board, with respect to our Chief Executive Officer) considered the following for each Named Executive Officer:

- overall corporate performance in the prior year;
- a Named Executive Officer's recent performance history and his or her potential for future responsibility;
- internal pay equity among the Named Executive Officers;
- criticality of the individual to the long-term success of the Company;
- equity awards previously granted to the individual;
- the amount of actual versus theoretical equity value per year that has been derived to date by the individual;
- the current actual value of unvested equity grants for each individual;
- the percentage of stock option grants with exercise prices greater than Geron's current stock price; and
- the number of stock option grants that have expired unexercised as a result of market conditions.

In addition to the above factors, the Compensation Committee (and the Independent Board, with respect to the Chief Executive Officer) generally referenced the defined peer group market data provided by Radford. In light of the objective to retain and engage existing Named Executive Officers, especially during periods of significant uncertainty given the sole reliance on our collaboration with Janssen to further develop, manufacture and commercialize imetelstat and the unknown outcome of our efforts to identify and acquire and/or in-license other oncology products, product candidates, programs or companies to grow and diversify our business, the Compensation Committee (and the Independent Board, with respect to the Chief Executive Officer) determined that in 2017 referencing the 50th to 75th percentile of the defined peer group market data provided by Radford for total compensation (consisting of annual base salary, annual performance-based bonus and the grant date fair value of equity awards) was appropriate for determining the level of stock option grants for our Named Executive Officers. In addition, the Compensation Committee determined that a broad-based approach in determining the level of stock option grants for our Named Executive Officers, except for the Chief Executive Officer, was appropriate to maintain internal pay equity among the executive team and reflected the collaborative, team-oriented nature of the group. In determining the size of the stock option grant for the Chief Executive Officer, the Independent Board considered the above factors, as well as the defined peer group market data provided by Radford, specifically the annual stock option grants provided to other chief executive officers in the defined peer group. The Compensation Committee (and the Independent Board, with respect to the Chief Executive Officer) also determined that the equity awards granted to our Named Executive Officers in 2017 should continue to consist only of stock options, rather than restricted stock awards that vest over time, because stock options deliver future value only if the price per share of our Common Stock increases above the exercise price, thus aligning the interests of our Named Executive Officers and stockholders for the long-term success of Geron.

Our Named Executive Officers received the following stock option grants in February 2017:

Named Executive Officer	2017 Stock Option Grant (# of shares)
John A. Scarlett, M.D.	1,050,000
Olivia K. Bloom	300,000
Melissa A. Kelly Behrs	300,000
Andrew J. Grethlein, Ph.D.	300,000
Stephen N. Rosenfield, J.D.	300,000

In accordance with Geron's equity grant practices, the exercise price for the February 2017 stock option grants was equal to the closing price of Geron Common Stock as reported by the Nasdaq Global Select Market on the date of grant and the vesting schedule is monthly over four years from the date of grant, provided the employee continues to provide services to Geron. For additional information regarding stock option grants to our Named Executive Officers in 2017, see the sub-section entitled "Grants of Plan-Based Awards for 2017." We did not reprice any stock options in 2017, despite the fact that our Named Executive Officers hold a significant number of stock options that are underwater.

Perquisites

In accordance with the terms of his original employment agreement, dated September 29, 2011, Dr. Scarlett received reimbursement for housing expenses (not to exceed $2,000 per month) and travel costs (not to exceed $20,000 per year) in connection with the commute from his personal residence in Texas to our headquarters in Menlo Park, California in 2017. These commuting expense benefits were negotiated with Dr. Scarlett at the time of his initial employment and were deemed a reasonable expense and necessary inducement to his commencement of employment with us. Dr. Scarlett does not receive separate compensation for serving as a member of our Board. Effective January 31, 2018, Dr. Scarlett's employment agreement was amended to increase the reimbursement for housing expenses to not more than $4,000 per month in recognition of the significantly higher housing costs in the San Francisco Bay Area since Dr. Scarlett was hired in 2011.

Employment Agreements and Severance and Change in Control Benefits

We have entered into written employment agreements with each of our Named Executive Officers that set forth the terms of their employment, including initial base salaries, and eligibility to participate in the Company's annual performance-based bonus program. In addition, each employment agreement includes restrictive covenants, such as non-compete and non-solicitation provisions, that would apply in the event of termination, which our Board believe helps protect our value. Each of our Named Executive Officers is employed "at will."

Our Named Executive Officers are entitled to certain severance and change in control benefits under the terms of our Amended Severance Plan, their employment agreements and our equity plans, as further described under the sub-section entitled "Potential Payments Upon Termination or Change in Control." Given the nature of the life sciences industry and the range of strategic initiatives we may explore, the Compensation Committee believes these severance and change in control provisions are essential elements of our executive compensation program and assist us in recruiting, retaining and developing key management talent in the competitive San Francisco Bay Area employment market. Our change in control benefits are intended to allow employees, including our Named Executive Officers, to focus their attention on the business operations of Geron in the face of the potentially disruptive impact of a rumored or actual change in control transaction, to assess takeover bids objectively without regard to the potential impact on their own job security and to allow for a smooth transition in the event of a change in control of Geron. In addition, our severance benefits provide reasonable protection to the executive officer in the event that he or she is not retained. We do not provide for any excise tax gross-ups in the Amended Severance Plan or in any individual employment agreement with a Named Executive Officer.

Compensation Recovery Provisions

Each of our executive officer employment agreements contain a "clawback provision" which requires that an executive officer forfeit his or her entire annual performance-based bonus if we determine that such executive officer has engaged in any misconduct intended to affect the payment of his or her annual performance-based bonus, or has otherwise engaged in any act or omission that would constitute cause for termination of his or her employment, as defined by his or her employment agreement.

Tax and Accounting Implications of Executive Compensation

The Compensation Committee considers the deductibility of executive compensation under Section 162(m) of the Code in designing, establishing and implementing our executive compensation policies and practices. Section 162(m) generally prohibits us from deducting any compensation over $1 million per taxable year paid to certain of our named executive officers unless, under tax laws in effect prior to January 1, 2018, such compensation is treated as "performance-based compensation" within the meaning of Section 162(m) of the Code. The Tax Cuts and Jobs Act(the "Tax Act") among other changes, repealed the exception from the deduction limit under Section 162(m) for performance-based compensation effective for taxable years beginning after December 31, 2017, such that compensation paid to our covered executive officers in excess of $1 million will not be deductible unless it qualifies for transition relief applicable to certain arrangements in place as of November 2, 2017 that are not materially modified after that date. However, because of ambiguities and uncertainties as to the application and interpretation of Section 162(m) as revised by the Tax Act, including the uncertain scope of the transition relief adopted in connection with repealing Section 162(m)'s performance-based compensation exception, no assurance can be given that previously granted compensation intended to satisfy the requirements for performance-based compensation will in fact qualify for such exception. The Compensation Committee may administer any awards granted prior to November 2, 2017 which qualify as performance-based compensation under Section 162(m), as amended by the Tax Act, in accordance with the transition rules applicable to binding contracts in effect on November 2, 2017, and will have the sole discretion to revise compensation arrangements to conform with the Tax Act and our Compensation Committee's administrative practices. In addition, our Compensation Committee reserves the right to modify compensation that was initially intended to be exempt from the Section 162(m) deduction limit when it was granted if the Compensation Committee determines that such modifications are consistent with our business needs. In determining the form and amount of compensation for our named executive officers, the Compensation Committee will continue to consider all elements of the cost of such compensation, including the potential impact of Section 162(m).

While the Compensation Committee considers the deductibility of awards as one factor in determining executive compensation, the Compensation Committee also looks at other factors in making its decisions and retains the flexibility to award compensation that it determines to be consistent with the goals of our executive compensation program even if the awards are not deductible by us for tax purposes.

In addition to considering the tax consequences, the Compensation Committee considers the accounting consequences of its decisions, including the impact of expenses being recognized in connection with equity-based awards, in determining the size and form of different equity-based awards.

Forward-Looking Statements

Except for the historical information contained herein, this Compensation Discussion and Analysis contains forward-looking statements, including, but not limited to, statements relating to the continued development of imetelstat by Janssen; the occurrence of the protocol-specified primary analysis for IMbark and the anticipated timing thereof; our efforts to identify and evaluate potential oncology product candidates, programs or companies to grow or diversify our business through acquisition and/or in-licensing; our plans, considerations, expectations and determinations regarding future compensation decisions, and other statements that are not historical facts. These statements involve risks and uncertainties that can cause actual results to differ materially from those in such forward-looking statements. These risks and uncertainties, include, without limitation, risks and uncertainties related to: (i) whether Janssen decides to continue to conduct IMbark, IMerge

and/or the entire imetelstat program, (ii) whether the FDA or other health authorities permit IMbark and IMerge to continue to proceed; (iii) whether any future efficacy or safety results may cause the benefit/risk profile of imetelstat to become unacceptable; (iv) whether additional time is needed to obtain longer-term efficacy and safety data from IMbark or IMerge; (v) whether sufficient efficacy and safety data are available to assess overall survival in IMbark; (vi) our potential inability to successfully identify and acquire and/or in-license other oncology products, product candidates, programs or companies to grow and diversify our business; and (vii) anticipated and unanticipated problems in connection with any acquisition or in-licensing transaction, including our potential inability to realize any of the anticipated benefits of such transactions. In addition, the actual executive compensation program that we adopt in the future may differ materially from the current executive compensation program summarized in this discussion. Additional information on the above-stated risks and uncertainties and additional risks, uncertainties and factors that could cause actual results to differ materially from those in the forward-looking statements are contained in our periodic reports filed with the Securities and Exchange Commission under the heading "Risk Factors," including our Annual Report on Form 10-K for the year ended December 31, 2017. Undue reliance should not be placed on forward-looking statements, which speak only as of the date of this proxy statement and the facts and assumptions underlying the forward-looking statements may change. Except as required by law, we disclaim any obligation to update these forward-looking statements to reflect future information, events or circumstances.

COMPENSATION COMMITTEE REPORT

Our Compensation Committee has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K and contained within this Proxy Statement with management and, based on such review and discussions, our Compensation Committee recommended to our Board that the Compensation Discussion and Analysis be included in this Proxy Statement and incorporated into our Annual Report on Form 10-K for the year ended December 31, 2017.

Submitted on March 21, 2018 by the members of the Compensation Committee of the Board of Directors:

Robert J. Spiegel, M.D., FACP	Compensation Committee Chair
Karin Eastham	Compensation Committee Member
V. Bryan Lawlis, Ph.D.	Compensation Committee Member

This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of the Company under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, other than in Geron's Annual Report on Form 10-K where it shall be deemed to be furnished, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

EXECUTIVE COMPENSATION TABLES AND RELATED NARRATIVE DISCLOSURE

Summary Compensation Table

The following table includes information concerning compensation for the years ended December 31, 2017, 2016 and 2015 with respect to our Principal Executive Officer, Principal Financial Officer and our three other most highly compensated executive officers at December 31, 2017 (our "Named Executive Officers").

Name and Principal Position	Year	Salary ($)	Option Awards ($)[1]	Non-Equity Incentive Plan Compensation ($)[2]	All Other Compensation ($)[3]	Total ($)
John A. Scarlett, M.D.	2017	644,000	1,625,925	386,400	62,985	2,719,310
President and Chief Executive Officer	2016	622,200	1,086,960	373,300	78,382	2,160,842
	2015	604,095	1,859,340	362,457	61,793	2,887,685
Olivia K. Bloom	2017	410,000	464,550	201,100	28,338	1,103,988
Executive Vice President, Finance,	2016	387,200	380,436	179,500	28,546	975,682
Chief Financial Officer and Treasurer	2015	375,950	650,769	174,253	12,468	1,213,440
Melissa A. Kelly Behrs	2017	386,500	464,550	189,600	37,892	1,078,542
Executive Vice President, Bus. Dev.	2016	373,400	380,436	173,100	40,981	967,917
and Portfolio & Alliance Management	2015	362,560	650,769	172,941	35,257	1,221,527
Andrew J. Grethlein, Ph.D.	2017	416,200	464,550	204,100	38,779	1,123,629
Executive Vice President, Development	2016	402,100	380,436	186,400	38,749	1,007,685
and Technical Operations	2015	390,370	650,769	180,937	36,308	1,258,384
Stephen N. Rosenfield, J.D.	2017	342,640 [4]	464,550	165,800	13,929	986,919
Executive Vice President, General Counsel	2016	331,000 [4]	380,436	153,400	13,897	878,733
and Corporate Secretary	2015	321,360 [4]	650,769	148,950	13,872	1,134,951

(1) Amounts represent the aggregate grant date fair value of stock option awards granted during the applicable fiscal year as calculated in accordance with FASB ASC Topic 718. Refer to Note 8 of the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017 regarding assumptions underlying the valuation of stock option awards and the calculation method. Refer to the supplemental table of the sub-section entitled "Outstanding Equity Awards at Fiscal Year-End" for information as to each Named Executive Officers' vested and unvested stock option holdings, and under the sub-section entitled "Grants of Plan-Based Awards for 2017" for the number of stock options granted during 2017.

(2) Amounts disclosed under the "Non-Equity Incentive Plan Compensation" column represent the annual performance-based bonuses earned pursuant to our annual performance-based bonus plan. For further discussion, see the sub-section entitled "Compensation Discussion and Analysis – 2017 Annual Performance-Based Bonuses."

(3) Amounts shown include, as applicable: (i) reimbursements for housing and travel expenses; (ii) the portion of life and health insurance premiums paid by the Company; and (iii) the matching contribution made to the Geron 401(k) Plan on behalf of each Named Executive Officer. Amounts for the year ended December 31, 2017 were as follows:

Named Executive Officer	Housing and Travel Reimbursements ($)	Insurance Premiums ($)	401(k) Match ($)[a]	Total ($)
John A. Scarlett, M.D.	44,000	18,985	—	62,985
Olivia K. Bloom	—	19,338	9,000	28,338
Melissa A. Kelly Behrs	—	26,700	11,192	37,892
Andrew J. Grethlein, Ph.D.	—	26,779	12,000	38,779
Stephen N. Rosenfield, J.D.	—	1,929	12,000	13,929

(a) Under Geron's 401(k) Plan, all participating employees may contribute up to the annual Internal Revenue Service contribution limit. In May 2016, the Compensation Committee approved a matching contribution equal to 50% of each employee's annual contributions during 2017. The matching contribution was made in cash in January 2018.

(4) The actual base salary amounts reflect Mr. Rosenfield's employment at 80% full-time equivalent.

Grants of Plan-Based Awards for 2017

The following table sets forth information regarding grants of plan-based awards with respect to each of our Named Executive Officers for the fiscal year ended December 31, 2017:

			Estimated Possible Payouts Under Non-Equity Incentive Plan Awards	All Other Option Awards:		
Named Executive Officer	Approval Date	Grant Date	Target[1] ($)	Number of Securities Underlying Options (#)[2]	Exercise Price of Stock Options ($/Sh)	Grant Date Fair Value of Stock Option Awards ($)[3]
John A. Scarlett, M.D.	2/9/17	2/9/17	—	1,050,000	2.15	1,625,925
		—	386,400	—	—	—
Olivia K. Bloom	2/8/17	2/9/17	—	300,000	2.15	464,550
		—	184,500	—	—	—
Melissa A. Kelly Behrs	2/8/17	2/9/17	—	300,000	2.15	464,550
		—	173,925	—	—	—
Andrew J. Grethlein, Ph.D.	2/8/17	2/9/17	—	300,000	2.15	464,550
		—	187,290	—	—	—
Stephen N. Rosenfield, J.D.	2/8/17	2/9/17	—	300,000	2.15	464,550
		—	154,188	—	—	—

(1) This column sets forth the target amount of each Named Executive Officer's annual performance-based bonus for the fiscal year ended December 31, 2017 under our annual performance-based bonus plan. Accordingly, the amounts set forth in this column do not represent actual compensation earned by our Named Executive Officers for the fiscal year ended December 31, 2017. For the actual compensation paid to our Named Executive Officers for the fiscal year ended December 31, 2017, see the sub-section entitled "Summary Compensation Table." For further discussion, see the sub-section entitled "Compensation Discussion and Analysis – 2017 Annual Performance-Based Bonuses."

(2) Stock option vests in a series of 48 equal consecutive monthly installments commencing February 9, 2017, provided the executive officer continues to provide services to the Company.

(3) Amounts represent the grant date fair value of each stock option granted in 2017 calculated in accordance with FASB ASC Topic 718. Refer to Note 8 of the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017 regarding assumptions underlying the valuation of stock option awards and the calculation method.

Narrative Disclosure to Summary Compensation Table and Grants of Plan-Based Awards Table

Employment Agreements. Each of our Named Executive Officers has entered into a written employment agreement with Geron.

We entered into an employment agreement with Dr. Scarlett dated September 29, 2011, in connection with the commencement of his employment with us. Dr. Scarlett's employment agreement originally provided him with an annual base salary of $550,000, subject to increase, and an annual performance-based bonus targeted at 60% of his annual base salary. On February 11, 2014, we amended Dr. Scarlett's employment agreement to provide for an annual base salary of $586,500, subject to increase, and to include a "clawback provision," which clawback provision is described in more detail under the sub-section entitled "Compensation Discussion and Analysis – Compensation Recovery Provisions." On January 31, 2018, we further amended Dr. Scarlett's employment agreement to increase the reimbursement for housing expenses to not more than $4,000 per month. See the sub-section entitled "Compensation Discussion and Analysis – Perquisites" for more information on the reimbursement arrangements we provide to Dr. Scarlett for housing expenses and travel costs.

We entered into an employment agreement with Ms. Bloom dated December 7, 2012, in connection with her appointment as our Senior Vice President, Finance, Chief Financial Officer and Treasurer, to provide an annual base salary of $330,000 and an annual performance-based bonus targeted at 40% of her annual base salary. On September 24, 2013, we amended Ms. Bloom's employment agreement to include a clawback provision. On February 11, 2014, in connection with her promotion to Executive Vice President, we amended Ms. Bloom's employment agreement to provide for an annual base salary of $365,000, subject to increase, and an annual performance-based bonus targeted at 45% of her annual base salary.

We entered into an employment agreement with Ms. Behrs effective January 31, 2013, in connection with her appointment as our Senior Vice President, Portfolio and Alliance Management, to provide an annual base salary of $341,550, subject to increase, and an annual performance-based bonus targeted at 40% of her annual base salary. On September 24, 2013, we amended Ms. Behrs' employment agreement to include a clawback provision. On February 11, 2014, in connection with her promotion to Executive Vice President, we amended Ms. Behrs' employment agreement to provide for an annual base salary of $352,000, subject to increase, and an annual performance-based bonus targeted at 45% of her annual base salary.

We entered into an employment agreement with Dr. Grethlein effective September 17, 2012, in connection with commencement of his employment with us, to provide an annual base salary of $355,000 and an annual performance-based bonus targeted at 45% of his annual base salary. On February 11, 2014, we amended Dr. Grethlein's employment agreement to provide for an annual base salary of $379,000, subject to increase, and to include a clawback provision.

We entered into an employment agreement with Mr. Rosenfield effective February 16, 2012, in connection with commencement of his employment with us, to provide an annual base salary of $292,000, subject to increase and pro-rated to reflect Mr. Rosenfield's 80% of a full-time work schedule, and an annual performance-based bonus targeted at 45% of his annual base salary. On September 24, 2013, we amended Mr. Rosenfield's employment agreement to include a clawback provision

See also the sub-section entitled "Potential Payments Upon Termination or Change in Control" with respect to severance benefits payable under the employment agreements with our Named Executive Officers and under our Amended Severance Plan.

Annual Performance-Based Bonuses. We provide for annual bonuses to reward Named Executive Officers for performance in the prior fiscal year. For more information regarding our annual performance-based

bonus plan, see the sub-section entitled "Compensation Discussion and Analysis – 2017 Annual Performance-Based Bonuses."

Equity Awards. All stock options awarded to our Named Executive Officers during 2017 were granted under our 2011 Plan. Descriptions of the terms of the stock options granted to our Named Executive Officers are included under the sub-section entitled "Compensation Discussion and Analysis – 2017 Equity Awards."

Our 2011 Plan was approved by our Board and our stockholders in 2011 and replaced our Amended and Restated 2002 Equity Incentive Plan. The 2011 Plan provides for the grant of stock options, restricted stock, restricted stock units, performance awards and other stock and cash awards. The exercise price of a stock option grant may not be less than 100% of the closing price of our Common Stock as reported by the Nasdaq Global Select Market on the date of grant. Stock option grants generally have a term of ten years, but may terminate sooner in connection with the holder's termination of service with us. Stock option grants vest based on conditions determined by the Compensation Committee or the Independent Board, which typically include continued service, but may also include performance goals and/or other conditions. The vesting of all equity awards granted under the 2011 Plan are subject to acceleration under certain termination or change in control circumstances as described under the sub-section entitled "Potential Payments Upon Termination or Change in Control."

If Proposal 3 is approved by our stockholders at the Annual Meeting, all equity awards will thereafter be granted under the 2018 Plan to our employees, including Named Executive Officers, non-employee directors and consultants. Please refer to Proposal 3 for more information on the terms of the 2018 Plan.

Outstanding Equity Awards at Fiscal Year-End

The following table includes information with respect to all outstanding equity awards held by our Named Executive Officers as of December 31, 2017.

	Option Awards				
Named Executive Officer	**Grant Date**	**Number of Securities Underlying Unexercised Options Exercisable (#)**	**Number of Securities Underlying Unexercised Options Unexercisable (#)**	**Option Exercise Price ($/Sh)**	**Option Expiration Date**
John A. Scarlett, M.D.	9/29/11	1,000,000	—	2.16	9/29/21
	5/17/12	505,000	—	1.41	5/17/22
	2/13/13	1,340,000	—	1.50	2/13/23
	2/11/14[(1)]	1,284,167	55,833	5.09	2/11/24
	3/13/15[(1)]	412,500	187,500	4.34	3/13/25
	2/11/16[(1)]	275,000	325,000	2.54	2/11/26
	2/9/17 [(1)]	218,750	831,250	2.15	2/9/27
Olivia K. Bloom	5/28/08	20,000	—	3.97	5/28/18
	5/28/08	10,829	—	3.97	5/28/18
	5/29/09	20,000	—	6.52	5/29/19
	5/29/09	7,500	—	6.52	5/29/19
	5/29/09	20,000	—	6.52	5/29/19
	5/19/10	20,000	—	5.29	5/19/20
	5/20/11	50,000	—	4.65	5/20/21
	5/17/12	215,000	—	1.41	5/17/22
	2/12/13	400,000	—	1.51	2/12/23
	2/10/14[(1)]	383,333	16,667	5.01	2/10/24
	3/13/15[(1)]	144,375	65,625	4.34	3/13/25
	2/11/16[(1)]	96,250	113,750	2.54	2/11/26
	2/9/17 [(1)]	62,500	237,500	2.15	2/9/27

		Option Awards			
Named Executive Officer	Grant Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($/Sh)	Options Expiration Date
Melissa A. Kelly Behrs	5/28/08	50,000	—	3.97	5/28/18
	5/28/08	14,167	—	3.97	5/28/18
	5/29/09	50,000	—	6.52	5/29/19
	5/29/09	20,000	—	6.52	5/29/19
	5/19/10	50,000	—	5.29	5/19/20
	5/19/10	10,000	—	5.29	5/19/20
	5/20/11	50,000	—	4.65	5/20/21
	5/17/12	300,000	—	1.41	5/17/22
	2/12/13	300,000	—	1.51	2/12/23
	2/10/14(1)	383,333	16,667	5.01	2/10/24
	3/13/15(1)	144,375	65,625	4.34	3/13/25
	2/11/16(1)	96,250	113,750	2.54	2/11/26
	2/9/17 (1)	62,500	237,500	2.15	2/9/27
Andrew J. Grethlein, Ph.D.	9/19/12	600,000	—	1.70	9/19/22
	2/12/13	300,000	—	1.51	2/12/23
	2/10/14(1)	383,333	16,667	5.01	2/10/24
	3/13/15(1)	144,375	65,625	4.34	3/13/25
	2/11/16(1)	96,250	113,750	2.54	2/11/26
	2/9/17 (1)	62,500	237,500	2.15	2/9/27
Stephen N. Rosenfield, J.D.	11/1/11(2)	36,000	—	2.22	11/1/21
	2/16/12	425,000	—	2.14	2/16/22
	5/17/12	200,000	—	1.41	5/17/22
	2/12/13	420,000	—	1.51	2/12/23
	2/10/14(1)	383,333	16,667	5.01	2/10/24
	3/13/15(1)	144,375	65,625	4.34	3/13/25
	2/11/16(1)	96,250	113,750	2.54	2/11/26
	2/9/17 (1)	62,500	237,500	2.15	2/9/27

(1) Stock option vests in a series of 48 equal consecutive monthly installments commencing from the date of grant, provided the executive officer continues to provide services to the Company. In addition to the specific vesting schedule for each stock option, each unvested stock option is subject to potential future vesting acceleration as described under the sub-section entitled "Potential Payments Upon Termination or Change in Control" below.

(2) Stock option was granted in connection with Mr. Rosenfield's consulting agreement prior to his employment with the Company.

Option Exercises and Restricted Stock Awards Vested in 2017

None of our Named Executive Officers exercised any options or vested any restricted stock awards during the fiscal year ended December 31, 2017.

Pension Benefits

None of our Named Executive Officers participates in or has an account balance under any defined benefit pension or retirement plans sponsored by the Company.

Non-Qualified Deferred Compensation

None of our Named Executive Officers participates in or has an account balance under non-qualified defined contribution plans or other non-qualified deferred compensation plans maintained by the Company.

Additional Benefits

Our Named Executive Officers are eligible to participate in our benefit plans generally available to all employees, as described in the sub-section entitled "Compensation Discussion and Analysis – Broad-Based Benefits."

Pay Ratio Disclosure

Under SEC rules, we are required to calculate and disclose the annual total compensation of our median employee, as well as the ratio of the annual total compensation of our median employee as compared to the annual total compensation of our Chief Executive Officer (the "CEO Pay Ratio"). To identify our median employee, we used the following methodology:

- To determine our total population of employees, we included all 15 full-time and three part-time employees as of December 31, 2017.
- To identify our median employee from our total population of employees, we ranked each employee's fiscal 2017 base salary as of December 31, 2017 from lowest to highest, excluding the Chief Executive Officer's fiscal 2017 base salary, and identified the median base salary from the list. We did not annualize the base salaries for part-time employees.
- We had no employees who were employed by us for less than the entire 2017 fiscal year, so we did not annualize the base salaries of any such employees.

Once the median employee was identified, we calculated the annual total compensation of this employee for fiscal 2017 in a manner consistent with that used to calculate the annual total compensation for our Named Executive Officers in the Summary Compensation Table above.

For fiscal 2017, the annual total compensation (including base salary, grant date fair value of stock option awards granted during the year, and annual performance-based bonus) of the median employee of our total population of employees (other than our Chief Executive Officer) was $500,250 and the annual total compensation of our Chief Executive Officer, as reported in the Summary Compensation Table above, was $2,719,310. Based on this information, the ratio of the annual total compensation of our Chief Executive Officer to the median of the annual total compensation of all employees was 5.4 to 1.

The CEO Pay Ratio above represents our reasonable estimate calculated in a manner consistent with SEC rules and applicable guidance. SEC rules and guidance provide significant flexibility in how companies identify the median employee, and each company may use a different methodology and make different assumptions particular to that company. As a result, and as explained by the SEC when it adopted these rules, in considering the pay ratio disclosure, stockholders should keep in mind that the rule was not designed to facilitate comparisons of pay ratios among different companies, even companies within the same industry, but rather to allow stockholders to better understand and assess each particular company's compensation practices and pay ratio disclosures.

The Compensation Committee, the Independent Board and our management did not use the CEO Pay Ratio measure in making compensation decisions for our employees or Named Executive Officers in 2017.

Potential Payments Upon Termination or Change in Control

Employment Agreements

Our Named Executive Officers are entitled to certain severance benefits payable in connection with a Covered Termination (as defined below) under their employment agreements. Pursuant to these employment agreements, in the event of a Covered Termination and subject to a release of claims against Geron, each Named Executive Officer will be entitled to (i) a lump-sum severance payment equal to 12 months (24 months, with respect to Dr. Scarlett) of his or her base salary in effect as of such termination, (ii) a lump-sum payment equal to the pro-rated portion of any target annual performance-based bonus, and (iii) continued COBRA coverage for a period of one year following a Covered Termination. In addition, the vested portion of any stock options, or other exercisable equity award in Geron, will remain exercisable until the earlier of the second anniversary of the date of termination and the original expiration date of such award.

For the purposes of our Named Executive Officers' employment agreements, the following definitions apply:

- "Covered Termination" generally means an Involuntary Termination Without Cause that occurs at any time, provided that such termination constitutes a "separation from service" within the meaning of Section 409A of the Code.
- "Involuntary Termination Without Cause" generally means an executive officer's dismissal or discharge other than: a) for Cause or b) following an involuntary or voluntary filing of bankruptcy, an assignment for the benefit of creditors, a liquidation of our assets in a formal proceeding or otherwise or any other event of insolvency by Geron, in any case, without an offer of comparable employment by Geron or a successor, acquirer, or affiliate of Geron.
- "Cause" generally means the executive officer's:
  - (i) willful act or omission constituting dishonesty, fraud or other malfeasance against the Company;
  - (ii) conviction of a felony;
  - (iii) debarment by the FDA from working in or providing services to any pharmaceutical or biotechnology company or other ineligibility under any law or regulation to perform the employee's duties to the Company; or
  - (iv) breach of any material Company policies.

Amended Severance Plan

In September 2002, the Board approved a Severance Plan that originally became effective on January 21, 2003 and was subsequently amended and restated, most recently in May 2013 (collectively referred to herein as the "Amended Severance Plan"). The Amended Severance Plan applies to all employees, including our Named Executive Officers, who are not subject to a performance improvement plan.

The Amended Severance Plan provides for cash severance benefits to be paid to employees, including our Named Executive Officers, under a "double trigger" situation, defined below as a Change in Control Triggering Event. Under this double trigger requirement, severance benefits are paid only upon the occurrence of a Change in Control and a termination of employment, with such termination being either by the Company or because the employee resigns due to a material change in their employment terms. The Board believes that a double trigger is considered industry standard and provides appropriate protection for our employees, including our Named Executive Officers, from post-Change in Control events that are not related to the employee's performance, encourages employees to stay throughout a transition period in the event of a Change in Control and does not provide for benefits for an employee who remains with the surviving company in a comparable position.

Under the Amended Severance Plan, the following definitions apply:

- "Change in Control Triggering Event" is defined as a termination without Cause in connection with a Change in Control (which has the same definition as under the 2011 Plan and under the proposed 2018 Plan) or within 12 months following a Change in Control. Additionally, if an individual is terminated by the Company in connection with a Change in Control but immediately accepts employment with the Company's successor or acquirer, they will not be deemed to have had a Change in Control Triggering Event unless:
  - (i) such individual is subsequently terminated without Cause by the successor or acquirer within the 12 months following the Change in Control;
  - (ii) such individual resigns employment with the Company because in connection with a Change in Control he or she is offered terms of employment (new or continuing) by the Company or the Company's successor or acquirer within 30 days after the Change in Control that results in a material change in the terms of employment; or
  - (iii) after accepting (or continuing) employment with the Company or the Company's successor or acquirer after a Change in Control, such individual resigns employment within 12 months following the Change in Control due to a material change in terms of employment as defined below.
- "Cause" generally means an employee's continued failure to satisfactorily perform duties, willful act or omission constituting dishonesty, fraud or other malfeasance against the Company, conviction of a felony, debarment by the FDA from working in or providing services to any pharmaceutical or biotechnology company or other ineligibility under any law or regulation to perform the employee's duties to the Company, or breach of any material Company policies.
- "material change in terms of employment" shall occur if one of the following events occurs without the employee's consent:
  - (i) base salary is materially reduced from that in effect immediately prior to the Change in Control;
  - (ii) if as of the Change in Control they are employed at the director level or above, they are subject to a material reduction in their duties (including responsibilities and/or authority);
  - (iii) their principal work location is to be moved to a location that is either more than 45 miles from their principal work location immediately prior to the Change in Control or more than 30 miles farther from their principal weekday residence than was their principal work location immediately prior to the Change in Control; or
  - (iv) the Company or the Company's successor or acquirer materially breaches the terms of any employment or similar service agreement with the employee.

Additionally, in order for the resignation to be deemed due to a material change in terms of their employment, the employee must provide written notice to the Company's General Counsel within 30 days after the first occurrence of the event giving rise to a material change in their terms of employment setting forth the basis for their resignation, allow the Company at least 30 days from receipt of such written notice to cure such event, and if such event is not reasonably cured within such period, the employee's resignation from all positions they then hold with the Company is effective not later than 90 days after the expiration of the cure period.

Upon a Change in Control Triggering Event, each of our Named Executive Officers is entitled to a severance payment equal to 15 months (18 months, with respect to Dr. Scarlett) of his or her base salary then in effect as of such Change in Control Triggering Event and payment of COBRA premiums for up to 15 months (18 months, with respect to Dr. Scarlett), which is consistent with severance plans offered at companies similar in size in our industry and competitive market environment. Payment of any benefits under the Amended Severance Plan is conditioned on the timely provision of an effective release of claims against Geron.

Severance benefits provided under the employment agreements with our Named Executive Officers are generally reduced by the same type of severance payments a Named Executive Officer is entitled to receive under the Amended Severance Plan to avoid duplication of benefits.

Equity Plans

As set forth in each individual stock option or restricted stock award agreement under the 2011 Plan, in the event of a Change in Control of Geron (defined below), the vesting of each outstanding option and stock award held by all employees and non-employee directors will accelerate so that each option shall become fully exercisable for all of the outstanding shares subject to such option immediately prior to the consummation of such transaction and each other type of award shall be fully vested with all forfeiture restrictions on any or all of such awards to lapse. For purposes of the 2011 Plan, a "Change in Control" generally means and includes each of the following:

a) as a result of any merger or consolidation, the voting securities of Geron outstanding immediately prior thereto represent (either by remaining outstanding or by being converted into voting securities of the surviving or acquiring entity) less than 49% of the combined voting power of the voting securities of Geron or such surviving or acquiring entity outstanding immediately after such merger or consolidation; during any period of 24 consecutive calendar months, the individuals who at the beginning of such period constitute the board of directors, and any new directors whose election by such board of directors or nomination for election by stockholders was approved by a vote of at least two-thirds of the members of such board of directors who were either directors on such board of directors at the beginning of the period or whose election or nomination for election as directors was previously so approved, for any reason cease to constitute at least a majority of the members thereof;

b) any individual, entity or group becomes the beneficial owner of more than 20% of the then outstanding shares of Geron Common Stock;

c) any sale of all or substantially all of the assets of Geron; or

d) the complete liquidation or dissolution of Geron.

In the event an employee or non-employee director experiences a termination of service as a result of the employee's or non-employee director's total and permanent disability (as defined in Section 22(e)(3) of the Code) or death, the 2011 Plan provides through each respective plan or the individual stock option or restricted stock award agreement or both, that the portion of each outstanding option and award held by such employee or non-employee director that would have vested during the 24 months after the date of such employee's termination of service (36 months for non-employee directors), will automatically vest. The options and awards that were already vested upon the date of termination and those that automatically vested in connection with an employee's total and permanent disability or death will remain exercisable until the earlier of the second anniversary of the date of termination and the original expiration date of such option or award. For a non-employee director, the post-termination exercise period is the earlier of the third anniversary of the date of termination and the original expiration date of such option or award.

If Proposal 3 is approved by our stockholders at the Annual Meeting, all equity awards will thereafter be granted under the 2018 Plan to our employees, including Named Executive Officers, non-employee directors and consultants. Please refer to Proposal 3 for more information on the terms of the 2018 Plan.

Potential Payments Table

The table below summarizes potential maximum payments under the Amended Severance Plan, individual employment agreements or equity plans, as applicable, for our Named Executive Officers if a qualifying termination and/or change in control event had occurred on December 29, 2017, the last business day of our last completed fiscal year. As of December 29, 2017, all unvested stock options held by the Named Executive Officers were out-of-the-money, meaning that all of such unvested stock options had exercise prices

that were higher than the closing price of our Common Stock on December 29, 2017 ($1.80). As a result, the value of any stock option vesting acceleration benefits in connection with termination and/or change in control events, for purposes of the table below, is $0. This does not mean, however, that the Named Executive Officers will not receive any value as a result of stock option vesting acceleration benefits in connection with an actual termination and/or change in control event occurring in the future; the actual value that the Named Executive Officers would receive can be determined only at the time of such termination and/or change in control event.

Named Executive Officer	Qualifying Event	Severance	Continued Healthcare Benefits	Option Vesting	Total
John A. Scarlett, M.D.	Covered Termination – No Change in Control[1]	$1,674,400	$ 25,646	$ —	$1,700,046
	Termination Without Cause or for Good Reason – With Change in Control[2][3]	1,674,400	38,469	—	1,712,869
	Without Termination – With Change in Control[3]	—	—	—	—
	Death[4]	—	—	—	—
	Disability[5]	—	—	—	—
Olivia K. Bloom	Covered Termination – No Change in Control[1]	$ 594,500	$ 25,999	$ —	$ 620,499
	Termination Without Cause or for Good Reason – With Change in Control[2][3]	697,000	32,499	—	729,499
	Without Termination – With Change in Control[3]	—	—	—	—
	Death[4]	—	—	—	—
	Disability[5]	—	—	—	—
Melissa A. Kelly Behrs	Covered Termination – No Change in Control[1]	$ 560,425	$ 36,086	$ —	$ 596,511
	Termination Without Cause or for Good Reason – With Change in Control[2][3]	657,050	45,108	—	702,158
	Without Termination – With Change in Control[3]	—	—	—	—
	Death[4]	—	—	—	—
	Disability[5]	—	—	—	—
Andrew J. Grethlein, Ph.D.	Covered Termination – No Change in Control[1]	$ 603,490	$ 36,166	$ —	$ 639,656
	Termination Without Cause or for Good Reason – With Change in Control[2][3]	707,540	45,207	—	752,747
	Without Termination – With Change in Control[3]	—	—	—	—
	Death[4]	—	—	—	—
	Disability[5]	—	—	—	—
Stephen N. Rosenfield, J.D.	Covered Termination – No Change in Control[1]	$ 496,828	$ 1,929	$ —	$ 498,757
	Termination Without Cause or for Good Reason – With Change in Control[2][3]	582,488	2,411	—	584,899
	Without Termination – With Change in Control[3]	—	—	—	—
	Death[4]	—	—	—	—
	Disability[5]	—	—	—	—

(1) Amounts represent lump-sum severance payments (including the target annual performance-based bonus) and continued healthcare benefits that could be paid to a Named Executive Officer upon a Covered Termination as of December 29, 2017, not in connection with a Change in Control transaction. The amounts in this row do not include any value associated with the extension, if any, of the post-termination exercise period applicable to the Named Executive Officers' stock options.

(2) Amounts represent lump-sum severance payments (including the target annual performance-based bonus), continued healthcare benefits and the intrinsic value of acceleration of unvested stock options, based on a market value of $1.80 per share of Common Stock as of December 29, 2017, that could be paid to a Named Executive Officer under such Named Executive Officer's employment agreement and/or our Amended Severance Plan in the event of a Covered Termination or Change in Control Triggering Event on December 29, 2017, as applicable. Any payments made under a Named Executive Officer's employment agreement would be deducted from payments due under the Amended Severance Plan. The amounts in this row do not include any value associated with the extension, if any, of the post-termination exercise period applicable to the Named Executive Officers' stock options.

(3) Amounts represent or include, as applicable, the intrinsic value of unvested stock options that would become fully vested and exercisable upon a Change in Control regardless of termination, based on a market value of $1.80 per share of Common Stock as of December 29, 2017. The amounts in this row do not include any value associated with the extension, if any, of the post-termination exercise period applicable to the Named Executive Officers' stock options.

(4) Amounts represent intrinsic value of unvested stock options that would become fully vested and exercisable upon a termination of service as a result of death, based on a market value of $1.80 per share of Common Stock as of December 29, 2017. The amounts in this row do not include any value associated with the extension, if any, of the post-termination exercise period applicable to the Named Executive Officers' stock options.

(5) Amounts represent the intrinsic value of unvested stock options that would become fully vested and exercisable upon a termination of service as a result of total and permanent disability (as defined in Section 22(e)(3) of the Code), based on a market value of $1.80 per share of Common Stock as of December 29, 2017. The amounts in this row do not include any value associated with the extension, if any, of the post-termination exercise period applicable to the Named Executive Officers' stock options.

PROPOSAL 3

APPROVAL OF THE GERON CORPORATION 2018 EQUITY INCENTIVE PLAN

We are asking our stockholders to approve the Geron Corporation 2018 Equity Incentive Plan (the "2018 Plan") at the Annual Meeting. The 2018 Plan was approved by Board in March 2018, subject to approval by our stockholders. The 2018 Plan is intended to be the successor to the 2011 Plan. Currently, we maintain the 2011 Plan to grant stock options in order to provide long-term incentives to our employees, non-employee directors and consultants. In light of changes in 2017 to federal tax laws, the Board decided to adopt and seek approval for the 2018 Plan to update the plan provisions to align with current tax provisions. In addition, the 2018 Plan will include a new reserve of 10,000,000 shares of Common Stock (in addition to the shares of Common Stock that are, or would become, available under our 2011 Plan) to ensure that the Company can continue to grant stock option awards to attract and retain high quality employees, non-employee directors and consultants.

If this Proposal 3 is approved by our stockholders, the 2018 Plan will become effective as of the date of the Annual Meeting, and no additional equity awards will be granted under the 2011 Plan. However, all outstanding equity awards granted under the 2011 Plan will continue to be subject to the terms and conditions as set forth in the agreements evidencing such awards and the terms of the 2011 Plan. In the event that our stockholders do not approve this Proposal 3, the 2018 Plan will not become effective and the 2011 Plan will continue to be effective in accordance with its terms, and our share reserve will not be increased.

Why You Should Vote to Approve the 2018 Plan

Equity Awards Are a Key Component of Our Compensation Philosophy

Our Board believes that the issuance of equity awards is a key element underlying our ability to attract, retain and motivate key personnel, non-employee directors and consultants because of the strong competition for highly trained and experienced individuals among biotechnology companies, especially in the San Francisco Bay Area. Therefore, the Board believes that the 2018 Plan is in the best interests of the Company and its stockholders and recommends a vote in favor of this Proposal 3.

Approval of the 2018 Plan by our stockholders will allow us to continue to grant equity awards at levels determined appropriate by our Board or Compensation Committee. The 2018 Plan will also allow us to utilize equity awards as long-term incentives to secure and retain the services of our employees, non-employee directors and consultants, consistent with our compensation philosophy and common compensation practice for our industry in the San Francisco Bay Area. To date, we have relied significantly on equity incentives in the form of stock option awards to attract and retain key employees, non-employee directors and consultants. We

believe the use of stock option awards strongly aligns the interests of our employees with those of our stockholders by placing a considerable proportion of our employees' total compensation "at risk" because it is contingent on the appreciation in value of our Common Stock. In addition, we believe stock option awards encourage employee ownership in Geron and promote retention through the reward of long-term Company performance.

We Carefully Manage the Use of Equity Awards, and the Size of our Share Reserve is Reasonable

Our compensation philosophy reflects broad-based eligibility for equity incentive awards, and we grant awards to all of our employees and non-employee directors. However, we recognize that equity awards dilute existing stockholders, and, therefore, we are mindful to responsibly manage the growth of our equity compensation program. We are committed to effectively monitoring our equity compensation share reserve, including our "burn rate," to ensure that we maximize stockholders' value by granting the appropriate number of stock option awards necessary to attract, reward, and retain employees, non-employee directors and consultants. Our burn rate for 2017 and in the last three years was below the 25th percentile of the defined peer group market data provided by Radford. Our equity awards outstanding was below the 50th percentile of the defined peer group market data provided by Radford. The tables below show our historical overhang and burn rate percentages under the current 2011 Plan and reflect the responsible actions we have taken in the past regarding our equity awards.

Overhang

The following table provides certain additional information regarding our 2011 Plan.

	As of March 8, 2018
Total number of shares of Common Stock subject to outstanding stock options	24,161,418
Weighted-average exercise price of outstanding stock options	$2.83
Weighted-average remaining term of outstanding stock options	6.8 years
Total number of shares of Common Stock subject to outstanding full value awards	None
Total number of shares of Common Stock available for grant under the 2011 Plan	2,903,727
Total number of shares of Common Stock available for grant under other equity incentive plans	None
Total number of shares of Common Stock outstanding	160,654,027
Per-share closing price of Common Stock as reported on Nasdaq Global Select Market	$2.66

Burn Rate

The following table provides detailed information regarding the activity related to our 2011 Plan for fiscal year 2017.

	For the Year Ended December 31, 2017
Total number of shares of Common Stock subject to stock options granted	3,484,000
Total number of shares of Common Stock subject to full value awards granted[(1)]	72,066
Weighted-average number of shares of Common Stock outstanding	159,224,986
Burn rate	2.2%

(1) Full value awards granted in 2017 represent stock issued in lieu of cash for quarterly retainer payments to non-employee directors under the Director Compensation Policy. For further information, see the sub-section entitled "Director Compensation Table."

Requested Shares

Subject to adjustment for certain changes in our capitalization, if this Proposal 3 is approved by our stockholders, the aggregate number of shares of our Common Stock that may be issued under the 2018 Plan will not exceed the sum of (i) the number of unallocated shares remaining available for the grant of new awards under the 2011 Plan as of the effective date of the 2018 Plan (which is equal to 2,903,727 shares as of March 8, 2018), (ii) 10,000,000 new shares, and (iii) certain shares subject to outstanding awards granted under the 2011 Plan and our Geron Corporation 1992 Stock Option Plan, Geron Corporation 1996 Directors' Stock Option Plan and Geron Corporation Amended and Restated 2002 Equity Incentive Plan (together, the "Prior Plans") that may become available for grant under the 2018 Plan as such shares become available from time to time (as further described below under "Description of the 2018 Plan – Shares Available for Stock Awards").

If the 2018 Plan and the new share reserve of 10,000,000 shares is approved by our stockholders, we expect to have approximately 12,903,727 shares available for grant after our Annual Meeting (based on shares available as of March 8, 2018). We believe the adoption of the 2018 Plan and new share reserve of 10,000,000 shares is necessary for us to remain competitive in the San Francisco Bay Area marketplace and supports our pay for performance philosophy by tying compensation to the achievement of specific and objective corporate goals that maximize long-term stockholder value. We anticipate the available pool of shares in the 2018 Plan will be sufficient for stock option awards for the next four years, using our historical burn rates, and are necessary to provide a predictable amount of equity awards for attracting, retaining, and motivating employees, non-employee directors and consultants.

Key Features of the 2018 Plan

The 2018 Plan includes many of the same provisions from the 2011 Plan that are designed to protect our stockholders' interests and to reflect corporate governance best practices. Following are three provisions in the 2018 Plan that are not in the 2011 Plan. These terms moderate the number of shares available for new grants of equity awards and preclude participants terminated for cause from equity award benefits:

- *No liberal share counting or recycling of appreciation awards*. The following shares will not become available again for issuance under the 2018 Plan: (i) shares underlying stock options or stock appreciation rights that are reacquired or withheld (or not issued) by us to satisfy the exercise or purchase price of a stock award; (ii) shares underlying stock options or stock appreciation rights that are reacquired or withheld (or not issued) by us to satisfy a tax withholding obligation in connection with a stock award; and (iii) any shares repurchased by us on the open market with the proceeds of the exercise or purchase price of a stock option or a stock appreciation right.
- *Fungible share counting.* The 2018 Plan contains a "fungible share counting" structure, whereby the number of shares of our Common Stock available for issuance under the 2018 Plan will be reduced by (i) one share for each share issued pursuant to a stock option or stock appreciation right

with an exercise price that is at least 100% of the fair market value of our Common Stock on the date of grant (an "Appreciation Award") granted under the 2018 Plan and (ii) 2.0 shares for each share issued pursuant to a stock award that is not an Appreciation Award (a "Full Value Award") granted under the 2018 Plan. As part of such fungible share counting structure, the number of shares of our Common Stock available for issuance under the 2018 Plan will be increased by (i) one share for each share that becomes available again for issuance under the terms of the 2018 Plan subject to an Appreciation Award and (ii) 2.0 shares for each share that becomes available again for issuance under the terms of the 2018 Plan subject to a Full Value Award.

- *Termination of stock options and stock appreciation rights on a participant's termination for cause*. If a participant's service is terminated for cause, which is defined under the 2018 Plan as (i) the participant's conviction of any crime involving fraud, dishonesty or moral turpitude; (ii) the participant's attempted commission of or participation in a fraud or act of dishonesty against the Company resulting in material harm to the business of the Company; (iii) the participant's intentional, material violation of any contract or agreement with the Company, or any statutory duty the participant owes to the Company; or (iv) the participant's conduct that constitutes gross misconduct, insubordination, incompetence or habitual neglect of duties and that results in material harm to the business of the Company, the participant's stock options and stock appreciation rights terminate immediately, and the participant is prohibited from exercising his or her stock options and stock appreciation rights.

Following are provisions in the 2018 Plan that are continuing from the 2011 Plan:

- *No single trigger accelerated vesting upon change in control*. The 2018 Plan does not provide for any automatic mandatory vesting of awards upon a change in control.
- *No liberal change in control definition*. The change in control definition in the 2018 Plan is not a "liberal" definition. A change in control transaction must actually occur in order for the change in control provisions in the 2018 Plan to be triggered.
- *Repricing is not allowed*. The 2018 Plan prohibits the repricing of outstanding stock options and stock appreciation rights and the cancellation of any outstanding stock options or stock appreciation rights that have an exercise or strike price greater than the then-current fair market value of our Common Stock in exchange for cash or other stock awards under the 2018 Plan without prior stockholder approval.
- *Stockholder approval is required for additional shares*. The 2018 Plan does not contain an annual "evergreen" provision. The 2018 Plan authorizes a fixed number of shares, so that stockholder approval is required to issue any additional shares, allowing our stockholders to have direct input on our equity compensation program.
- *Awards subject to forfeiture/clawback*. Awards granted under the 2018 Plan will be subject to recoupment in accordance with any clawback provisions in a participant's employment agreement or other agreement with the Company or any clawback policy that we are required to adopt pursuant to the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, we may impose other clawback, recovery or recoupment provisions in a stock award agreement, including a reacquisition right in respect of previously acquired shares or other cash or property upon the occurrence of cause.
- *No discounted stock options or stock appreciation rights*. All stock options and stock appreciation rights granted under the 2018 Plan must have an exercise or strike price equal to or greater than the fair market value of our Common Stock on the date the stock option or stock appreciation right is granted.

- *Administration by the Board or independent committee*. The 2018 Plan will be administered by the Board or members of a Board committee, which may consist solely of two or more "non-employee directors" within the meaning of Rule 16b-3 under the Exchange Act. The Board may retain the authority to concurrently administer the 2018 Plan with any such committee and may, at any time, revest in the Board some or all of the powers previously delegated to the committee.
- *Material amendments require stockholder approval*. Consistent with Nasdaq rules, the 2018 Plan requires stockholder approval of any material revisions to the 2018 Plan. In addition, certain other amendments to the 2018 Plan require stockholder approval.
- *Restrictions on dividends*. The 2018 Plan provides that (i) no dividends or dividend equivalents may be paid with respect to any shares of our Common Stock subject to a stock award before the date such shares have vested, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of the applicable stock award agreement (including any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to us on the date such shares are forfeited to or repurchased by us due to a failure to vest.

Description of the 2018 Plan

The material features of the 2018 Plan are described below. The following description of the 2018 Plan is a summary only and is qualified in its entirety by reference to the complete text of the 2018 Plan. Stockholders are urged to read the actual text of the 2018 Plan in its entirety, which is attached to this Proxy Statement as Appendix A.

Purpose

The 2018 Plan is designed to secure and retain the services of our employees, non-employee directors and consultants, provide incentives for our employees, non-employee directors and consultants to exert maximum efforts for the success of our Company and our affiliates, and provide a means by which our employees, non-employee directors and consultants may be given an opportunity to benefit from increases in the value of our Common Stock. The 2018 Plan is also designed to align employees' interests with stockholder interests.

Successor to 2011 Plan

The 2018 Plan is intended to be the successor to the 2011 Plan. If the 2018 Plan is approved by our stockholders, no additional stock awards will be granted under the 2011 Plan. If the 2018 Plan is not approved by our stockholders, the 2018 Plan will not become effective and the 2011 Plan will continue to be effective in accordance with its terms, and our share reserve will not be increased.

Types of Stock Awards

The terms of the 2018 Plan provide for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, other stock awards, and performance awards that may be settled in cash, stock, or other property.

Shares Available for Stock Awards

Subject to adjustment for certain changes in our capitalization, the aggregate number of shares of our Common Stock that may be issued under the 2018 Plan (the "Share Reserve"), will not exceed the sum of (i) the number of unallocated shares remaining available for the grant of new stock awards under the 2011 Plan as of the effective date of the 2018 Plan, (ii) 10,000,000 new shares, and (iii) any Prior Plans' Returning Shares (as defined below), as such shares become available from time to time.

The "Prior Plans' Returning Shares" are shares subject to outstanding stock awards granted under the Prior Plans that, from and after the effective date of the 2018 Plan, (i) expire or terminate for any reason prior to exercise or settlement, (ii) are forfeited, cancelled or otherwise returned to us because of the failure to meet a contingency or condition required for the vesting of such shares, or (iii) other than with respect to outstanding stock options and stock appreciation rights granted under the Prior Plans with an exercise or strike price of at least 100% of the fair market value of the underlying Common Stock on the date of grant ("Prior Plans' Appreciation Awards"), are reacquired or withheld (or not issued) by us to satisfy a tax withholding obligation in connection with a stock award.

The number of shares of our Common Stock available for issuance under the 2018 Plan will be reduced by (i) one share for each share of Common Stock issued pursuant to a stock option or stock appreciation right with an exercise or strike price of at least 100% of the fair market value of the underlying Common Stock on the date of grant, and (ii) 2.0 shares for each share of Common Stock issued pursuant to a Full Value Award (i.e., any stock award that is not a stock option or stock appreciation right with an exercise or strike price of at least 100% of the fair market value of the underlying Common Stock on the date of grant).

If (i) any shares of Common Stock subject to a stock award are not issued because the stock award expires or otherwise terminates without all of the shares covered by the stock award having been issued or is settled in cash, (ii) any shares of Common Stock issued pursuant to a stock award are forfeited back to or repurchased by us because of the failure to meet a contingency or condition required for the vesting of such shares, or (iii) with respect to a Full Value Award, any shares of Common Stock are reacquired or withheld (or not issued) by us to satisfy a tax withholding obligation in connection with the award, then such shares will again become available for issuance under the 2018 Plan (collectively, the "2018 Plan Returning Shares"). For each 2018 Plan Returning Share subject to a Full Value Award, or Prior Plans' Returning Share subject to a stock award other than a Prior Plans' Appreciation Award, the number of shares of Common Stock available for issuance under the 2018 Plan will increase by 2.0 shares.

Any shares of Common Stock reacquired or withheld (or not issued) by us to satisfy the exercise or purchase price of a stock award will no longer be available for issuance under the 2018 Plan, including any shares subject to a stock award that are not delivered to a participant because the stock award is exercised through a reduction of shares subject to the stock award. In addition, any shares reacquired or withheld (or not issued) by us to satisfy a tax withholding obligation in connection with a stock option or stock appreciation right granted under the 2018 Plan or a Prior Plans' Appreciation Award, or any shares repurchased by us on the open market with the proceeds of the exercise or strike price of a stock option or stock appreciation right granted under the 2018 Plan or a Prior Plans' Appreciation Award will no longer be available for issuance under the 2018 Plan.

Eligibility

All of our approximately 18 employees, six non-employee directors and 22 consultants as of March 19, 2018 are eligible to participate in the 2018 Plan and may receive all types of awards other than incentive stock options. Incentive stock options may be granted under the 2018 Plan only to our employees, including our executive officers.

Administration

The 2018 Plan will be administered by our Board, which may in turn delegate authority to administer the 2018 Plan to a committee of non-employee directors. Our Board may, at any time, revest in itself some or all of the power delegated to such a committee. The Board and any committee of non-employee directors to whom the Board may delegate authority to administer the 2018 Plan are each considered to be a Plan Administrator for purposes of this Proposal 3. Subject to the terms of the 2018 Plan, the Plan Administrator may determine the recipients, the types of stock awards to be granted, the number of shares of our Common Stock subject to or the cash value of stock awards, and the terms and conditions of stock awards granted under the 2018 Plan, including the period of their exercisability and vesting. The Plan Administrator also has the authority to provide

for accelerated exercisability and vesting of stock awards. Subject to the limitations set forth below, the Plan Administrator also determines the fair market value applicable to a stock award and the exercise or strike price of stock options and stock appreciation rights granted under the 2018 Plan.

The Plan Administrator may also delegate to one or more executive officers the authority to designate employees who are not executive officers to be recipients of certain stock awards and the number of shares of our Common Stock subject to such stock awards. Under any such delegation, the Plan Administrator will specify the total number of shares of our Common Stock that may be subject to the stock awards granted by such executive officer. The executive officer may not grant a stock award to himself or herself.

Repricing; Cancellation and Re-Grant of Stock Options or Stock Appreciation Rights

Under the 2018 Plan, the Plan Administrator does not have the authority to reprice any outstanding stock option or stock appreciation right by reducing the exercise or strike price of the stock option or stock appreciation right or to cancel any outstanding stock option or stock appreciation right that has an exercise or strike price greater than the then-current fair market value of our Common Stock in exchange for cash or other stock awards without obtaining the approval of our stockholders. Such approval must be obtained within 12 months prior to such an event.

Stock Options

Stock options may be granted under the 2018 Plan pursuant to stock option agreements. The 2018 Plan permits the grant of stock options that are intended to qualify as incentive stock options ("ISOs") and nonstatutory stock options ("NSOs").

The exercise price of a stock option granted under the 2018 Plan may not be less than 100% of the fair market value of the Common Stock subject to the stock option on the date of grant and, in some cases (see "Limitations on Incentive Stock Options" below), may not be less than 110% of such fair market value.

The term of stock options granted under the 2018 Plan may not exceed ten years and, in some cases (see "Limitations on Incentive Stock Options" below), may not exceed five years. Except as otherwise provided in a participant's stock option agreement or other written agreement with us, if a participant's service relationship with us (referred to in this Proposal 3 as "continuous service") terminates (other than for cause or the participant's death or disability), the participant may exercise any vested stock options for up to three months following the participant's termination of continuous service. Except as otherwise provided in a participant's stock option agreement or other written agreement with us, if a participant's continuous service terminates due to the participant's disability or death (or the participant dies within a specified period, if any, following termination of continuous service), the participant, or his or her beneficiary, as applicable, may exercise any vested stock options for up to 24 months following the participant's termination due to the participant's disability or following the participant's death. Except as explicitly provided otherwise in a participant's stock option agreement or other written agreement with us or one of our affiliates, if a participant's continuous service is terminated for cause (as defined in the 2018 Plan), all stock options held by the participant will terminate upon the participant's termination of continuous service and the participant will be prohibited from exercising any stock option from and after such termination date. Except as otherwise provided in a participant's stock option agreement or other written agreement with us or one of our affiliates, the term of a stock option may be extended if the exercise of the stock option following the participant's termination of continuous service (other than for cause or the participant's death or disability) would be prohibited by applicable securities laws or if the sale of any Common Stock received upon exercise of the stock option following the participant's termination of continuous service (other than for cause) would violate our insider trading policy. In no event, however, may a stock option be exercised after its original expiration date.

Acceptable forms of consideration for the purchase of our Common Stock pursuant to the exercise of a stock option under the 2018 Plan will be determined by the Plan Administrator and may include payment: (i) by cash, check, bank draft or money order payable to us; (ii) pursuant to a program developed under Regulation T

as promulgated by the Federal Reserve Board; (iii) by delivery to us of shares of our Common Stock (either by actual delivery or attestation); (iv) by a net exercise arrangement (for NSOs only); or (v) in other legal consideration approved by the Plan Administrator.

Stock options granted under the 2018 Plan may become exercisable in cumulative increments, or "vest," as determined by the Plan Administrator at the rate specified in the stock option agreement. Shares covered by different stock options granted under the 2018 Plan may be subject to different vesting schedules as the Plan Administrator may determine.

The Plan Administrator may impose limitations on the transferability of stock options granted under the 2018 Plan in its discretion. Generally, a participant may not transfer a stock option granted under the 2018 Plan other than by will or the laws of descent and distribution or, subject to approval by the Plan Administrator, pursuant to a domestic relations order or an official marital settlement agreement. However, the Plan Administrator may permit transfer of a stock option in a manner that is not prohibited by applicable tax and securities laws. In addition, subject to approval by the Plan Administrator, a participant may designate a beneficiary who may exercise the stock option following the participant's death.

Limitations on Incentive Stock Options

In accordance with current federal tax laws, the aggregate fair market value, determined at the time of grant, of shares of our Common Stock with respect to ISOs that are exercisable for the first time by a participant during any calendar year under all of our stock plans may not exceed $100,000. The stock options or portions of stock options that exceed this limit or otherwise fail to qualify as ISOs are treated as NSOs. No ISO may be granted to any person who, at the time of grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power unless the following conditions are satisfied:

- the exercise price of the ISO must be at least 110% of the fair market value of the Common Stock subject to the ISO on the date of grant; and
- the term of the ISO must not exceed five years from the date of grant.

Subject to adjustment for certain changes in our capitalization, the aggregate maximum number of shares of our Common Stock that may be issued pursuant to the exercise of ISOs under the 2018 Plan is 25,807,454 shares.

Stock Appreciation Rights

Stock appreciation rights may be granted under the 2018 Plan pursuant to stock appreciation right agreements. Each stock appreciation right is denominated in common stock share equivalents. The strike price of each stock appreciation right will be determined by the Plan Administrator, but will in no event be less than 100% of the fair market value of the Common Stock subject to the stock appreciation right on the date of grant. The Plan Administrator may also impose restrictions or conditions upon the vesting of stock appreciation rights that it deems appropriate. The appreciation distribution payable upon exercise of a stock appreciation right may be paid in shares of our Common Stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the stock appreciation right agreement. Stock appreciation rights will be subject to the same conditions upon termination of continuous service and restrictions on transfer as stock options under the 2018 Plan.

Restricted Stock Awards

Restricted stock awards may be granted under the 2018 Plan pursuant to restricted stock award agreements. A restricted stock award may be granted in consideration for cash, check, bank draft or money order payable to us, the participant's services performed for us, or any other form of legal consideration acceptable to the Plan Administrator. Shares of our Common Stock acquired under a restricted stock award may be subject to forfeiture to or repurchase by us in accordance with a vesting schedule to be determined by the

Plan Administrator. Rights to acquire shares of our Common Stock under a restricted stock award may be transferred only upon such terms and conditions as are set forth in the restricted stock award agreement. A restricted stock award agreement may provide that any dividends paid on restricted stock will be subject to the same vesting conditions as apply to the shares subject to the restricted stock award. Upon a participant's termination of continuous service for any reason, any shares subject to restricted stock awards held by the participant that have not vested as of such termination date may be forfeited to or repurchased by us.

Restricted Stock Unit Awards

Restricted stock unit awards may be granted under the 2018 Plan pursuant to restricted stock unit award agreements. Payment of any purchase price may be made in any form of legal consideration acceptable to the Plan Administrator. A restricted stock unit award may be settled by the delivery of shares of our Common Stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the restricted stock unit award agreement. Restricted stock unit awards may be subject to vesting in accordance with a vesting schedule to be determined by the Plan Administrator. Dividend equivalents may be credited in respect of shares of our Common Stock covered by a restricted stock unit award, provided that any additional shares credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying restricted stock unit award. Except as otherwise provided in a participant's restricted stock unit award agreement or other written agreement with us, restricted stock units that have not vested will be forfeited upon the participant's termination of continuous service for any reason.

Performance Awards

The 2018 Plan allows us to grant performance stock awards. A performance stock award is a stock award that is payable (including that may be granted, may vest, or may be exercised) contingent upon the attainment of pre-determined performance goals during a performance period. A performance stock award may require the completion of a specified period of continuous service. The length of any performance period, the performance goals to be achieved during the performance period, and the measure of whether and to what degree such performance goals have been attained will be determined by the Plan Administrator in its discretion. In addition, to the extent permitted by applicable law and the applicable stock award agreement, the Plan Administrator may determine that cash may be used in payment of performance stock awards.

Performance goals under the 2018 Plan will be based on any one or more of the following performance criteria: (i) net earnings (either before or after one or more of the following: (A) interest, (B) taxes, (C) depreciation and (D) amortization); (ii) gross or net sales or revenue; (iii) net income (either before or after taxes); (iv) adjusted net income; (v) operating earnings or profit; (vi) cash flow (including, but not limited to, operating cash flow and free cash flow); (vii) return on assets; (viii) return on capital; (ix) return on stockholders' equity; (x) total stockholder return; (xi) return on sales; (xii) gross or net profit or operating margin; (xiii) costs; (xiv) funds from operations; (xv) expenses; (xvi) working capital; (xvii) earnings per share; (xviii) adjusted earnings per share; (xix) price per share; (xx) regulatory body approval for commercialization of a product; (xxi) positive results from clinical trials; (xxii) initiation of clinical trials; (xxiii) implementation, completion or maintenance of critical projects or relationships; (xxiv) closing of significant financing; (xxv) execution or completion of strategic initiatives; (xxvi) market share; (xxvii) economic value; (xxviii) cash flow return on capital; (xxix) return on net assets; and (xxx) other measures of performance selected by the Plan Administrator.

Performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. The Plan Administrator may, in its sole discretion, provide that one or more objectively determinable adjustments shall be made to one or more of the performance goals. Such adjustments may include one or more of the following: (i) items related to a change in accounting principle; (ii) items relating to financing activities; (iii) expenses for restructuring or productivity initiatives; (iv) other non-operating items; (v) items related to acquisitions; (vi) items attributable to the business operations of any entity acquired by the Company during the performance period; (vii) items

related to the disposal of a business or segment of a business; (viii) items related to discontinued operations that do not qualify as a segment of a business under applicable accounting standards; (ix) items attributable to any stock dividend, stock split, combination or exchange of stock occurring during the performance period; (x) any other items of significant income or expense which are determined to be appropriate adjustments; (xi) items relating to unusual or extraordinary corporate transactions, events or developments, (xii) items related to amortization of acquired intangible assets; (xiii) items that are outside the scope of the Company's core, on-going business activities; (xiv) items related to acquired in-process research and development; (xv) items relating to changes in tax laws; (xvi) items relating to major licensing or partnership arrangements; (xvii) items relating to asset impairment charges; (xviii) items relating to gains or losses for litigation, arbitration and contractual settlements; (xix) items relating to any other unusual or nonrecurring events or changes in applicable laws, accounting principles or business conditions; or (xx) any other items selected by the Plan Administrator.

In addition, the Plan Administrator retains the discretion to reduce or eliminate the compensation or economic benefit due upon the attainment of any performance goals and to define the manner of calculating the performance criteria it selects to use for a performance period.

Other Stock Awards

Other forms of stock awards valued in whole or in part by reference to, or otherwise based on, our Common Stock may be granted either alone or in addition to other stock awards under the 2018 Plan. Subject to the terms of the 2018 Plan, the Plan Administrator will have sole and complete authority to determine the persons to whom and the time or times at which such other stock awards will be granted, the number of shares of our Common Stock to be granted and all other terms and conditions of such other stock awards.

Clawback Policy

Awards granted under the 2018 Plan will be subject to recoupment in accordance with any clawback provisions in a participant's employment agreement or other agreement with the Company or any clawback policy that we are required to adopt pursuant to the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Plan Administrator may impose other clawback, recovery or recoupment provisions in a stock award agreement as the Plan Administrator determines necessary or appropriate, including a reacquisition right in respect of previously acquired shares of our Common Stock or other cash or property upon the occurrence of cause.

Changes to Capital Structure

In the event of certain capitalization adjustments, the Plan Administrator will appropriately adjust: (i) the class(es) and maximum number of securities subject to the 2018 Plan; (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of ISOs; and (iii) the class(es) and number of securities and price per share of stock subject to outstanding stock awards.

Corporate Transaction

In the event of a corporate transaction (as defined in the 2018 Plan and described below), the Board will have the discretion to take one or more of the following actions with respect to outstanding stock awards (contingent upon the closing or completion of such corporate transaction), unless otherwise provided in the stock award agreement or other written agreement with the participant or unless otherwise provided by the Board at the time of grant:

- arrange for the surviving or acquiring corporation (or its parent company) to assume or continue the award or to substitute a similar stock award for the award (including an award to acquire the same consideration paid to our stockholders pursuant to the corporate transaction);

- arrange for the assignment of any reacquisition or repurchase rights held by us with respect to the stock award to the surviving or acquiring corporation (or its parent company);
- accelerate the vesting (and, if applicable, the exercisability) of the stock award and provide for its termination prior to the effective time of the corporate transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us with respect to the award;
- cancel or arrange for the cancellation of the stock award, to the extent not vested or exercised prior to the effective time of the corporate transaction, in exchange for such cash consideration, if any, as the Board may consider appropriate; and
- make a payment, in such form as may be determined by the Board, equal to the excess, if any, of (i) the value of the property the participant would have received upon the exercise of the stock award immediately prior to the effective time of the corporate transaction, over (B) any exercise price payable in connection with such exercise.

The Board is not obligated to treat all stock awards or portions of stock awards in the same manner. The Board may take different actions with respect to the vested and unvested portions of a stock award.

For purposes of the 2018 Plan, a corporate transaction generally will be deemed to occur in the event of the consummation of: (i) a sale or other disposition of all or substantially all of our consolidated assets; (ii) a sale or other disposition of at least 90% of our outstanding securities; (iii) a merger, consolidation or similar transaction following which we are not the surviving corporation; or (iv) a merger, consolidation or similar transaction following which we are the surviving corporation but the shares of our Common Stock outstanding immediately prior to the transaction are converted or exchanged into other property by virtue of the transaction.

Change in Control

Under the 2018 Plan, a stock award may be subject to additional acceleration of vesting and exercisability upon or after a change in control (as defined in the 2018 Plan and described below) as may be provided in the participant's stock award agreement, in any other written agreement with us or in our Director Compensation Policy, but in the absence of such provision, no such acceleration will occur.

For purposes of the 2018 Plan, a change in control generally will be deemed to occur upon the first to occur of an event set forth in any one of the following: (i) as a result of any merger or consolidation, the voting securities of the Company outstanding immediately prior thereto represent less than 49% of the combined voting power of the voting securities of the Company or such surviving or acquiring entity outstanding immediately after such transaction; (ii) a majority of our Board becomes comprised of individuals whose nomination, appointment, or election was not approved by at least two-thirds of the Board members or their approved successors; (iii) any individual, entity or group becomes the beneficial owner of more than 20% of the then outstanding shares of Common Stock of the Company; (iv) any sale of all or substantially all of the assets of the Company; or (v) the complete liquidation or dissolution of the Company.

The acceleration of vesting of a stock award in the event of a corporate transaction or a change in control event under the 2018 Plan may be viewed as an anti-takeover provision, which may have the effect of discouraging a proposal to acquire or otherwise obtain control of us.

Plan Amendments and Termination

The Plan Administrator will have the authority to amend or terminate the 2018 Plan at any time. However, except as otherwise provided in the 2018 Plan or a stock award agreement, no amendment or termination of the 2018 Plan may materially impair a participant's rights under his or her outstanding stock awards without the participant's consent. We will obtain stockholder approval of any amendment to the 2018 Plan as required by applicable law and listing requirements. No incentive stock options may be granted under the 2018 Plan after the tenth anniversary of the date the 2018 Plan was adopted by our Board.

U.S. Federal Income Tax Consequences

The following is a summary of the principal United States federal income tax consequences to participants and us with respect to participation in the 2018 Plan. This summary is not intended to be exhaustive and does not discuss the income tax laws of any local, state or foreign jurisdiction in which a participant may reside. The information is based upon current federal income tax rules and therefore is subject to change when those rules change. Because the tax consequences to any participant may depend on his or her personal circumstances, each participant should consult the participant's tax adviser regarding the federal, state, local and other tax consequences of the grant or exercise of a stock award or the disposition of stock acquired under the 2018 Plan. The 2018 Plan is not qualified under the provisions of Section 401(a) of the Code and is not subject to any of the provisions of the Employee Retirement Income Security Act of 1974. Our ability to realize the benefit of any tax deductions described below depends on our generation of taxable income as well as the requirement of reasonableness and the satisfaction of our tax reporting obligations.

Nonstatutory Stock Options

Generally, there is no taxation upon the grant of an NSO if the stock option is granted with an exercise price equal to the fair market value of the underlying stock on the grant date. Upon exercise, a participant will recognize ordinary income equal to the excess, if any, of the fair market value of the underlying stock on the date of exercise of the stock option over the exercise price. If the participant is employed by us or one of our affiliates, that income will be subject to withholding taxes. The participant's tax basis in those shares will be equal to his or her fair market value on the date of exercise of the stock option, and the participant's capital gain holding period for those shares will begin on that date.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and the satisfaction of a tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant.

Incentive Stock Options

The 2018 Plan provides for the grant of stock options that are intended to qualify as "incentive stock options," as defined in Section 422 of the Code. Under the Code, a participant generally is not subject to ordinary income tax upon the grant or exercise of an ISO. If the participant holds a share received upon exercise of an ISO for more than two years from the date the stock option was granted and more than one year from the date the stock option was exercised, which is referred to as the required holding period, the difference, if any, between the amount realized on a sale or other taxable disposition of that share and the participant's tax basis in that share will be long-term capital gain or loss.

If, however, a participant disposes of a share acquired upon exercise of an ISO before the end of the required holding period, which is referred to as a disqualifying disposition, the participant generally will recognize ordinary income in the year of the disqualifying disposition equal to the excess, if any, of the fair market value of the share on the date of exercise of the stock option over the exercise price. However, if the sales proceeds are less than the fair market value of the share on the date of exercise of the stock option, the amount of ordinary income recognized by the participant will not exceed the gain, if any, realized on the sale. If the amount realized on a disqualifying disposition exceeds the fair market value of the share on the date of exercise of the stock option, that excess will be short-term or long-term capital gain, depending on whether the holding period for the share exceeds one year.

For purposes of the alternative minimum tax, the amount by which the fair market value of a share of stock acquired upon exercise of an ISO exceeds the exercise price of the stock option generally will be an adjustment included in the participant's alternative minimum taxable income for the year in which the stock option is exercised. If, however, there is a disqualifying disposition of the share in the year in which the stock option is exercised, there will be no adjustment for alternative minimum tax purposes with respect to that share. In computing alternative minimum taxable income, the tax basis of a share acquired upon exercise of an ISO is increased by the amount of the adjustment taken into account with respect to that share for alternative minimum tax purposes in the year the stock option is exercised.

We are not allowed a tax deduction with respect to the grant or exercise of an ISO or the disposition of a share acquired upon exercise of an ISO after the required holding period. If there is a disqualifying disposition of a share, however, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant, subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and provided that either the employee includes that amount in income or we timely satisfy our reporting requirements with respect to that amount.

Restricted Stock Awards

Generally, the recipient of a restricted stock award will recognize ordinary income at the time the stock is received equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. If, however, the stock is not vested when it is received (for example, if the employee is required to work for a period of time in order to have the right to sell the stock), the recipient generally will not recognize income until the stock becomes vested, at which time the recipient will recognize ordinary income equal to the excess, if any, of the fair market value of the stock on the date it becomes vested over any amount paid by the recipient in exchange for the stock. A recipient may, however, file an election with the Internal Revenue Service, within 30 days following his or her receipt of the restricted stock award, to recognize ordinary income, as of the date the recipient receives the restricted stock award, equal to the excess, if any, of the fair market value of the stock on the date the restricted stock award is granted over any amount paid by the recipient for the stock.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock award will be the amount paid for such shares plus any ordinary income recognized either when the stock is received or when the stock becomes vested.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and the satisfaction of a tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock award.

Restricted Stock Unit Awards

Generally, the recipient of a restricted stock unit award structured to comply with the requirements of Section 409A of the Code or an exception to Section 409A of the Code will recognize ordinary income at the time the stock is delivered equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. To comply with the requirements of Section 409A of the Code, the stock subject to a restricted stock unit award may generally only be delivered upon one of the following events: a fixed calendar date (or dates), separation from service, death, disability or a change in control. If delivery occurs on another date, unless the restricted stock unit award otherwise complies with or qualifies for an exception to the requirements of Section 409A of the Code (including delivery upon achievement of a performance goal), in addition to the tax treatment described above, the recipient will owe an additional 20% federal tax and interest on any taxes owed.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock unit award will be the amount paid for such shares plus any ordinary income recognized when the stock is delivered.

Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and the satisfaction of a tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock unit award.

Stock Appreciation Rights

Generally, if a stock appreciation right is granted with an exercise price equal to the fair market value of the underlying stock on the grant date, the recipient will recognize ordinary income equal to the fair market value of the stock or cash received upon such exercise. Subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code, and the satisfaction of a tax reporting obligation, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the stock appreciation right.

New Plan Benefits

Future benefits under the 2018 Plan are discretionary for our employees, including executive officers, and consultants, and therefore are not currently determinable.

Equity awards for our non-employee directors would be made under the 2018 Plan, if approved by stockholders, pursuant to the Director Compensation Policy. Under the Director Compensation Policy, any non-employee director who is first elected to the Board will be granted an option to purchase 120,000 shares of our Common Stock on the date of his or her initial election to the Board. In addition, on the date of each annual meeting, each person who continues to serve as a non-employee member of the Board of Directors following such annual meeting will be granted a stock option to purchase 70,000 shares of our Common Stock. All option grants will have an exercise price per share equal to the fair market value of our Common Stock on the date of grant. Each initial grant for a non-employee director will vest over a three-year period, and each annual grant for a non-employee director will vest over a one-year period, in each case subject to the director's continuing service on our Board.

Under the Director Compensation Policy, annual non-employee director cash compensation is paid quarterly in arrears in cash, or at each director's election, in fully vested shares of our Common Stock that would be issued under the 2018 Plan, if approved by stockholders. The number of shares subject to each such stock award is determined by dividing the value of the cash which would otherwise have been paid to a non-employee director under the Director Compensation Policy by our closing stock price on the date of payment. Because our closing stock price typically changes daily, it is therefore not possible to determine the number of shares subject to each such stock award at this time. For additional information regarding our compensation policy for non-employee directors, see the section entitled, "Compensation of Directors."

Required Vote and Board of Directors Recommendation

Approval of this Proposal 3 requires the affirmative vote of the holders of a majority of the shares represented and entitled to vote at the annual meeting either in person or by proxy. Abstentions will be counted toward the tabulation of votes cast on proposals presented to the stockholders and will have the same effect as negative votes. Broker non-votes are counted towards a quorum, but are not counted for any purpose in determining whether this matter has been approved.

The Board of Directors Unanimously Recommends That Stockholders Vote FOR Proposal 3

PROPOSAL 4

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of the Board has selected Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2018, and has further directed that management submit the selection of the independent registered public accounting firm for ratification by our stockholders at the Annual

Meeting. Ernst & Young LLP has served as our independent registered public accounting firm since 1992. Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting, will have an opportunity to make a statement if they so desire, and will be available to respond to appropriate questions from stockholders.

We have been informed by Ernst & Young LLP that, to the best of their knowledge, neither the firm nor any of its members or their associates has any direct financial interest or material indirect financial interest in Geron or our affiliates.

Stockholder ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm is not required by our Bylaws or otherwise. However, the Board is submitting the selection of Ernst & Young LLP to our stockholders for ratification as a matter of good corporate practice. If our stockholders fail to ratify the selection, the Audit Committee and the Board will reconsider whether or not to retain that firm. Even if the selection is ratified, the Audit Committee and the Board in their discretion may direct the appointment of a different independent registered public accounting firm at any time during the year if they determine that such a change would be in the best interests of Geron and our stockholders.

Vote Required and Board Recommendation

Stockholder ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm requires the affirmative vote of the holders of a majority of the shares having voting power present in person or represented by proxy at the Annual Meeting. Abstentions will have the same effect as a vote against this proposal.

The Board of Directors Unanimously Recommends
That Stockholders Vote FOR Proposal 4

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The Audit Committee maintains policies and procedures for the pre-approval of work performed by the independent registered public accounting firm. Under the Audit Committee's charter, all engagements of the independent registered public accounting firm must be approved in advance by the Audit Committee. Management recommendations will be considered in connection with such engagements, but management will have no authority to approve engagements. For each quarterly Audit Committee meeting, management prepares a schedule of all fees paid to Ernst & Young LLP during the previous quarter and estimated fees for projects contemplated in the following quarter. The Chairperson of the Audit Committee must be notified at any time the fees for a specific project exceed 20% of the approved budget for authorization to continue the project.

Audit Fees and All Other Fees

The Audit Committee approved 100% of all audit and other services provided by Ernst & Young LLP in 2017 and 2016. The total fees paid to Ernst & Young LLP for the last two fiscal years are as follows:

	Fiscal Year Ended December 31, 2017	Fiscal Year Ended December 31, 2016
Audit Fees[1]	$ 490,000	$ 465,000
Audit Related Fees	—	—
Tax Fees	—	—
All Other Fees[2]	1,800	—

(1) Audit Fees include the integrated audit of annual financial statements and internal control over financial reporting, reviews of quarterly financial statements included in Quarterly Reports on Forms 10-Q, consultations on matters addressed during the audit or quarterly reviews, and services provided in connection with SEC filings, including consents and comment and comfort letters.

(2) Amounts represent fees for access to Ernst & Young's technical research portal.

AUDIT COMMITTEE REPORT

The Audit Committee of Geron Corporation's Board of Directors is comprised of three independent directors as required by the listing standards of Nasdaq. The Audit Committee operates pursuant to a written charter that was last amended and restated by the Board in November 2017. A copy of the Audit Committee's amended and restated charter is available on our website at www.geron.com.

The members of the Audit Committee are Ms. Eastham (Chairperson), Dr. Lawlis and Mr. Bradbury. The Board has determined that all members of the Audit Committee are financially literate as required by Nasdaq. The Board has also determined that Ms. Eastham and Mr. Bradbury are audit committee financial experts as defined by Nasdaq.

The function of the Audit Committee is to assist the Board in fulfilling its oversight responsibilities regarding:

(i) the quality and integrity of our financial statements,

(ii) our compliance with legal and regulatory requirements,

(iii) the qualifications and independence of the independent registered public accounting firm serving as our auditors and

(iv) the performance of the independent registered public accounting firm.

Management is responsible for Geron's internal controls and financial reporting. The independent registered public accounting firm is responsible for performing an independent audit of Geron's financial statements in accordance with generally accepted auditing standards and to issue a report thereon. The Audit Committee's responsibility is to monitor and oversee these processes.

In this context, the Audit Committee hereby reports as follows:

1) The Audit Committee has reviewed and discussed the audited financial statements of the Company as of and for the fiscal year ended December 31, 2017 with management and the independent registered public accounting firm serving as the Company's independent auditors.

2) The Audit Committee has discussed with the independent auditors the matters required to be discussed by Auditing Standard No. 1301 (Communication with Audit Committees) as adopted by the Public Company Accounting Oversight Board, other professional standards, membership provisions of the SEC Practice Session, and other SEC rules, as currently in effect.

3) The Audit Committee has received the written disclosures and the letter from the independent auditors required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent auditor's communications with the Audit Committee concerning independence, and has discussed with the independent auditors the independent auditor's independence.

4) The Audit Committee has considered whether the independent auditor's provision of non-audit services to the Company is compatible with maintaining the independent auditor's independence.

Based on the reports and discussions described above, the Audit Committee recommended to the Board that the audited financial statements be included in Geron's Annual Report on Form 10-K for the year ended December 31, 2017, for filing with the SEC.

Submitted on March 12, 2018 by the members of the Audit Committee of Geron's Board of Directors.

Karin Eastham (Chairperson)
Daniel M. Bradbury
V. Bryan Lawlis, Ph.D.

This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of the Company under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

EQUITY COMPENSATION PLAN INFORMATION

The following table summarizes information with respect to equity awards under Geron's equity compensation plans at December 31, 2017:

	Number of securities to be issued upon exercise of outstanding options, warrants and rights[1]	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))[1]
	(a)	(b)	(c)
Equity compensation plans approved by security holders	22,408,529 [2]	$ 2.96	7,098,035 [3]
Equity compensation plans not approved by security holders	—	—	—
Total	22,408,529	$ 2.96	7,098,035

(1) The table does not include information regarding Geron's 401(k) Plan. Under Geron's 401(k) Plan, all participating employees may contribute up to the annual Internal Revenue Service contribution limit. The Geron 401(k) Plan permits us to make matching contributions on behalf of plan participants, which matching contributions can be made in Common Stock that vests ratably over four years for each year of service completed by the employee, commencing from the date of hire, until it is fully vested when the employee has completed four years of service. As of December 31, 2017, there were approximately 591,365 shares of Common Stock held in this plan.

(2) Consists of 684,236 shares to be issued upon exercise of outstanding options under the 2002 Equity Incentive Plan, 20,862,418 shares to be issued upon exercise of outstanding options under the 2011 Plan, and 861,875 shares to be issued upon exercise of outstanding options under the 2006 Directors' Plan.

(3) Consists of 895,308 shares of Common Stock available for issuance under the 2014 Employee Stock Purchase Plan, including an estimated 5,000 shares subject to purchase during the current offering period that commenced January 1, 2018 and ends on June 30, 2018, and 6,202,727 shares of Common Stock available for issuance under the 2011 Plan. The 2018 Plan is intended to be the successor to the 2011 Plan. If the 2018 Plan is approved by our stockholders at the Annual Meeting, no additional awards will be granted under the 2011 Plan.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth the amount and percentage of the outstanding shares of Common Stock, which, according to the information supplied to us, are beneficially owned by: (i) each person, or group of affiliated persons, who is known by us to be a beneficial owner of more than 5% of our outstanding Common Stock, (ii) each of our directors and nominees for director, (iii) each of our Named Executive Officers and (iv) all current directors and executive officers as a group. Unless otherwise indicated, the address for each of the stockholders in the table below is c/o Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025. Beneficial ownership is stated as of December 31, 2017.

	Beneficial Ownership[1]	
Beneficial Owner	Number of Shares	Percent of Total
Directors/Nominees and Named Executive Officers:		
Daniel M. Bradbury[2]	378,638	*
Karin Eastham[3]	339,547	*
Hoyoung Huh, M.D., Ph.D.[4]	536,801	*
V. Bryan Lawlis, Ph.D.[5]	260,000	*
Susan M. Molineaux, Ph.D.[6]	305,483	*
Robert J. Spiegel, M.D., FACP[7]	321,790	*
Melissa A. Kelly Behrs[8]	1,700,907	1.1%
Olivia K. Bloom[9]	1,612,294	1.0%
Andrew J. Grethlein, Ph.D.[10]	1,635,393	1.0%
Stephen N. Rosenfield, J.D.[11]	1,831,750	1.1%
John A. Scarlett, M.D.[12]	5,310,000	3.2%
All directors and executive officers as a group (11 persons)[13]	14,232,603	8.2%
5% Beneficial Holders:		
FMR LLC[14] 245 Summer Street, Boston, MA 02210	19,739,475	12.4%
BlackRock, Inc.[15] 55 East 52nd Street, New York, NY 10055	12,002,475	7.5%

* Represents beneficial ownership of less than 1% of Common Stock.

(1) Beneficial ownership is determined in accordance with the rules of the SEC. In computing the number of shares beneficially owned by a person and the percentage of ownership of that person, shares of Common Stock exercisable pursuant to the exercise of options held by that person that are currently exercisable or exercisable within 60 days of December 31, 2017 are deemed outstanding. Such shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of each other person. Applicable percentages are based on 159,877,239 shares outstanding on December 31, 2017, adjusted as required by rules promulgated by the SEC. The persons named in this table, to the best of our knowledge, have sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by them, subject to community property laws where applicable and except as indicated in the other footnotes to this table.

(2) Consists of 142,776 shares held directly by Daniel M. Bradbury, 10,862 shares held by The Bradbury Family Trust and 225,000 shares issuable upon the exercise of outstanding options held by Mr. Bradbury exercisable within 60 days of December 31, 2017.

(3) Consists of 39,047 shares held directly by Karin Eastham and 300,500 shares issuable upon the exercise of outstanding options held by Ms. Eastham exercisable within 60 days of December 31, 2017.

(4) Consists of 154,301 shares held by Hoyoung Huh and 382,500 shares issuable upon the exercise of outstanding options held by Dr. Huh exercisable within 60 days of December 31, 2017.

(5) Consists of 260,000 shares issuable upon the exercise of outstanding options held by V. Bryan Lawlis exercisable within 60 days of December 31, 2017.

(6) Consists of 80,483 shares held by the Molineaux Family Trust and 225,000 shares issuable upon the exercise of outstanding options held by Dr. Molineaux exercisable within 60 days of December 31, 2017.

(7) Consists of 61,790 shares held directly by Robert J. Spiegel and 260,000 shares issuable upon exercise of outstanding options held by Dr. Spiegel exercisable within 60 days of December 31, 2017.

(8) Consists of 123,614 shares held directly by Melissa A. Kelly Behrs and 1,577,293 shares issuable upon exercise of outstanding options held by Ms. Behrs exercisable within 60 days of December 31, 2017.

(9) Consists of 115,839 shares held directly by Olivia K. Bloom and 1,496,455 shares issuable upon the exercise of outstanding options held by Ms. Bloom exercisable within 60 days of December 31, 2017.

(10) Consists of 2,267 shares held directly by Andrew J. Grethlein and 1,633,126 shares issuable upon the exercise of outstanding options held by Dr. Grethlein exercisable within 60 days of December 31, 2017.

(11) Consists of 17,624 shares held directly by Stephen N. Rosenfield and 1,814,126 shares issuable upon the exercise of outstanding options held by Mr. Rosenfield exercisable within 60 days of December 31, 2017.

(12) Consists of 125,000 shares held by the John A. Scarlett III 1999 Trust and 5,185,000 shares issuable upon exercise of outstanding options held by Dr. Scarlett exercisable within 60 days of December 31, 2017.

(13) Consists of shares beneficially owned by our current directors and executive officers as described in footnotes (2) through (12).

(14) The indicated ownership is based solely on a Schedule 13G/A filed with the SEC by FMR LLC ("FMR") on February 13, 2018, reporting beneficial ownership as of December 29, 2017. The Schedule 13G/A filed by the reporting person provides information only as of December 29, 2017, and, consequently, the beneficial ownership of the above-mentioned reporting person may have changed since December 29, 2017. FMR has sole voting power with respect to none of the shares and sole dispositive power with respect to all of the shares. FMR is the beneficial owner of 19,739,475 shares. Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR, representing 49% of the voting power of FMR. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR. Neither FMR nor Abigail P. Johnson has the sole power to vote or direct the voting of the shares owned directly by the various investment companies registered under the Investment Company Act ("Fidelity Funds") advised by Fidelity Management & Research Company, a wholly owned subsidiary of FMR, which power resides with the Fidelity Funds' Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the Fidelity Funds' Boards of Trustees.

(15) The indicated ownership is based solely on a Schedule 13G/A filed with the SEC by BlackRock, Inc. ("BlackRock") on January 25, 2018, reporting beneficial ownership as of December 31, 2017. The Schedule 13G/A filed by the reporting person provides information only as of December 31, 2017, and, consequently, the beneficial ownership of the above-mentioned reporting person may have changed since December 31, 2017. BlackRock has sole voting power with respect to 11,729,154 shares and sole dispositive power with respect to all of the shares. BlackRock is the beneficial owner of 12,002,475 shares.

CERTAIN TRANSACTIONS

Certain Transactions With or Involving Related Persons

There has not been, nor is there currently proposed, any transaction or series of similar transactions to which the Company was or is to be a party in which the amount involved exceeds $120,000 and in which any current director, executive officer, holder of more than 5% of our Common Stock or any immediate family member of any of the foregoing persons had or will have a direct or indirect material interest other than with respect to compensation arrangements described under the sections entitled "Executive Compensation Tables and Related Narrative Disclosure" and "Compensation of Directors."

Policies and Procedures

Our Audit Committee is responsible for reviewing and approving all related party transactions, which would include a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any "related person" are participants involving an amount that exceeds $120,000, not including transactions involving compensation for services provided to Geron as an employee, director, consultant or similar capacity by a related person. Related parties include any of our directors or executive officers, certain of our stockholders and their immediate family members. This obligation is set forth in writing in the Audit Committee charter. A copy of the Audit Committee charter is available on the Corporate Governance page under the Investor Relations section of our website at www.geron.com.

Where a transaction has been identified as a related-person transaction, management would present information regarding the proposed related-person transaction to the Audit Committee (or, where Audit Committee approval would be inappropriate, to another independent body of the Board) for consideration and approval or ratification. The presentation would include a description of, among other things, the material facts, the interests, direct and indirect, of the related persons, the benefits to Geron of the transaction and whether any alternative transactions were available. To identify related-person transactions in advance, the Audit Committee relies on information supplied by Geron's executive officers and directors. In considering related-person transactions, the Audit Committee takes into account the relevant available facts and circumstances including, but not limited to:

(i) the risks, costs and benefits to Geron;

(ii) the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated;

(iii) the terms of the transaction;

(iv) the availability of other sources for comparable services or products; and

(v) the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

In the event a director has an interest in the proposed transaction, the director must recuse himself or herself from the deliberations and approval. In determining whether to approve, ratify or reject a related-person transaction, the Audit Committee considers, in light of known circumstances, whether the transaction is in, or is not inconsistent with, the best interests of Geron and our stockholders, as the Audit Committee determines in the good faith exercise of its discretion.

OTHER MATTERS

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who beneficially own more than 10% of a registered class of our equity securities (collectively, "Reporting Persons"), to file with the SEC initial reports of ownership and reports of changes in ownership of Geron Common Stock and other equity securities. Reporting Persons are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file.

To our knowledge, based solely upon a review of the copies of such reports furnished to us and written representations from such directors, executive officers and stockholders that no other reports were required, we believe that during fiscal year ended December 31, 2017, all Reporting Persons complied with the applicable Section 16(a) reporting requirements.

Stockholder Nominations and Proposals for 2019 Annual Meeting

We expect to hold our 2019 Annual Meeting of Stockholders in May 2019. All proposals or director nominations by stockholders intended to be presented at the 2019 Annual Meeting of Stockholders must be directed to the attention of our Corporate Secretary, at the address set forth on the first page of this Proxy Statement.

To be considered for inclusion in next year's proxy materials, your proposal must be submitted in writing by December 4, 2018, to our Corporate Secretary at Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California, 94025, and must comply with all applicable requirements of Rule 14a-8 promulgated under the Exchange Act. However, if our 2019 Annual Meeting of Stockholders is not held between April 15, 2019 and June 14, 2019, then the deadline will be a reasonable time prior to the time we begin to print and send our proxy materials.

If you wish to bring a proposal before the stockholders or nominate a director at the 2019 Annual Meeting of Stockholders, but you are not requesting that your proposal or nomination be included in next year's proxy materials, you must notify our Corporate Secretary, in writing, not earlier than the close of business on January 15, 2019 and not later than the close of business on February 14, 2019. However, if the 2019 Annual Meeting of Stockholders is not held between April 15, 2019 and June 14, 2019, the notice must be delivered no later than the 90th day prior to the 2019 Annual Meeting of Stockholders or, if later, the 10th day following the day on which public disclosure of the date of the 2019 Annual Meeting of Stockholders is made. In addition, our Bylaws provide that the stockholder's notice must include certain information for the person making the proposal or the nomination for director, including:

- name and address;
- the class and number of shares of the Company, owned of record or beneficially owned;
- any derivative, swap or other transaction which gives economic risk similar to the ownership of shares of the Company;
- any proxy, agreement, arrangement, understanding or relationship that confers a right to vote any shares of the Company;
- any agreement, arrangement, understanding or relationship, engaged in to increase or decrease the level of risk related to, the voting power with respect to, and certain other arrangements or agreements with respect to, shares of the Company;
- any performance-related fees that the proposing/nominating person is entitled, based on any increase or decrease in the value of any shares of the Company; and

- any other information required by the SEC to be disclosed in a proxy statement or certain other filings. The stockholder's notice must also include information for each proposed director nominee, including:
  - the same information as for the nominating person set forth above;
  - all information required to be disclosed in a proxy statement in connection with election of directors; and
  - financial or other relationships between the nominating person and the nominee during the past three years.

Copies of our Bylaws may be obtained from our Corporate Secretary.

Director Nominees Recommended by Stockholders

The Nominating and Corporate Governance Committee, to date, has not adopted a formal policy with regard to the consideration of director candidates recommended by stockholders and will consider director candidates recommended by stockholders on a case-by-case basis, as appropriate. Stockholders who wish to recommend individuals for consideration by the Nominating and Corporate Governance Committee should send written notice to the Nominating and Corporate Governance Committee Chairman, Geron Corporation, 149 Commonwealth Drive, Suite 2070, Menlo Park, California 94025, within the time periods set forth above. Such notification should set forth all information relating to such nominee as is required to be disclosed in solicitations of proxies for elections of directors pursuant to Regulation 14A under the Exchange Act, including such person's written consent to being named in a proxy statement as a nominee and to serving as a director if elected, the name and address of such stockholder or beneficial owner on whose behalf the nomination is being made, the class and number of shares of the Company owned beneficially and of record by such stockholder or beneficial owner, and all information regarding the nominee that would be required to be included in the Company's proxy statement by the rules of the SEC, including the nominee's age, business experience for the past five years and any directorships held by the nominee during the past five years. The Nominating and Corporate Governance Committee does not intend to alter the procedure by which it evaluates candidates based on whether the candidate was recommended by a stockholder or not.

Director Qualifications

The Nominating and Corporate Governance Committee believes that nominees for election to the Board must possess certain minimum qualifications and attributes. The nominee:

- must meet the objective independence requirements set forth by the SEC and Nasdaq,
- must exhibit strong personal integrity, character and ethics, and a commitment to ethical business and accounting practices,
- must not be involved in on-going litigation with the Company or be employed by an entity which is engaged in such litigation and
- must not be the subject of any on-going criminal investigations, including investigations for fraud or financial misconduct.

In addition, the Nominating and Corporate Governance Committee may consider the following criteria, among others:

(i) experience in corporate management, such as serving as an officer or former officer of a publicly held company, and a general understanding of marketing, finance and other elements relevant to the success of a publicly traded company in today's business environment;

(ii) experience in our industry and with relevant social policy concerns;

(iii) experience as a board member of other publicly held companies;

(iv) expertise in an area of our operations; and

(v) practical and mature business judgment, including the ability to make independent analytical inquiries.

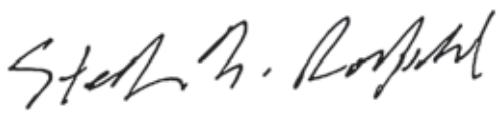
The Nominating and Corporate Governance Committee does not specifically consider diversity in identifying nominees for election as a director. However, specific experience or expertise that could assist Geron in developing our clinical product opportunity provides added value and insight to the Board. In general, the Nominating and Corporate Governance Committee aspires the Board to be comprised of individuals that represent a diversity of professional experiences and perspectives and who portray characteristics of diligence, commitment, mutual respect and professionalism with an emphasis on consensus building. The Board does not follow any ratio or formula to determine the appropriate mix. Rather, it uses its judgment to identify nominees whose backgrounds, attributes and experiences, taken as a whole, will contribute to the high standards of board service at Geron.

Directors are expected to rigorously prepare for, attend and participate in Board meetings and meetings of the committees of the Board on which they serve, to ask direct questions and require straight answers, and to spend the time needed and meet as frequently as necessary to properly discharge their responsibilities and duties as directors. Each Board member is expected to ensure that other existing and planned future commitments do not materially interfere with the member's service as an outstanding director.

General

Your proxy is solicited on behalf of our Board. Unless otherwise directed, proxies will be voted at the Annual Meeting (or an adjournment or postponement thereof), "FOR" all of the nominees listed in Proposal 1 and "FOR" Proposals 2, 3 and 4. If any matter other than those described in this Proxy Statement were to be properly submitted for a vote at the Annual Meeting, or with respect to any adjournment or postponement thereof, the proxy holders appointed by the Board will have the discretion to vote on those matters for you as they see fit.

By Order of the Board of Directors,



Stephen N. Rosenfield
Executive Vice President, General Counsel and Corporate Secretary

March 30, 2018

APPENDIX A

GERON CORPORATION
2018 EQUITY INCENTIVE PLAN
(Adopted by the Board of Directors: March 2018)

1. GENERAL.

(a) Successor to and Continuation of Prior Plans. The Plan is intended as the successor to and continuation of the Geron Corporation 2011 Incentive Award Plan (the "***2011 Plan***") and the Geron Corporation 1992 Stock Option Plan (the "***1992 Plan***"), the Geron Corporation 1996 Directors' Stock Option Plan (the "***1996 Directors' Plan***) and the Geron Corporation Amended and Restated 2002 Equity Incentive Plan (the "***2002 Plan***", and together with the 2011 Plan, the 1992 Plan, the 1996 Directors' Plan, the "***Prior Plans***"). Following the Effective Date, no additional stock awards may be granted under the Prior Plans. Any unallocated shares remaining available for grant under the Prior Plans as of 12:01 a.m., Pacific Time on the Effective Date (the "***Prior Plans' Available Reserve***") will cease to be available under the such Prior Plans at such time and will be added to the Share Reserve (as further described in Section 3(a) below) and be then immediately available for grant and issuance pursuant to Stock Awards granted under the Plan. In addition, from and after 12:01 a.m., Pacific Time on the Effective Date, all outstanding stock awards granted under the Prior Plans will remain subject to the terms of such Prior Plans, as applicable; *provided, however*, that any shares subject to outstanding stock awards granted under the Prior Plans that (i) expire or terminate for any reason prior to exercise or settlement, (ii) are forfeited, cancelled or otherwise returned to the Company because of the failure to meet a contingency or condition required for the vesting of such shares, or (iii) other than with respect to outstanding options and stock appreciation rights granted under the Prior Plans, with respect to which the exercise or strike price is at least one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the option or stock appreciation right on the date of grant (the "***Prior Plans' Appreciation Awards***"), are reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with a stock award (collectively, the "***Prior Plans' Returning Shares***") will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when such shares become Prior Plans' Returning Shares and become available for issuance pursuant to Awards granted hereunder. All Stock Awards granted on or after 12:01 a.m., Pacific Time on the Effective Date will be subject to the terms of this Plan.

(b) Eligible Award Recipients. Employees, Directors and Consultants are eligible to receive Stock Awards under this Plan.

(c) Available Stock Awards. The Plan provides for the grant of the following types of Stock Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights, (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, and (vii) Other Stock Awards.

(d) Purpose. The Plan, through the granting of Stock Awards, is intended to help the Company and any Affiliate secure and retain the services of eligible Stock Award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock. The Plan is also intended to provide long-term incentives that align the interests of our eligible Stock Award recipients with the interests of our stockholders.

2. ADMINISTRATION.

(a) Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Stock Awards; (B) when and how each Stock Award will be granted; (C) what type of Stock Award will be granted; (D) the provisions of each Stock Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Stock Award; (E) the number of shares of Common Stock subject to, or the cash value of, a Stock Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Stock Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Stock Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Stock Award Agreement, in a manner and to the extent it will deem necessary or expedient to make the Plan or Stock Award fully effective.

(iii) To settle all controversies regarding the Plan and Stock Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which a Stock Award may be exercised or vest (or the time at which cash or shares of Common Stock may be issued in settlement thereof).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or a Stock Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under his or her then-outstanding Stock Award without his or her written consent except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Stock Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. However, if required by applicable law or listing requirements (including NASDAQ Listing Rule 5635), and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Stock Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, or (E) materially expands the types of Stock Awards available for issuance under the Plan. Except as provided in the Plan (including Section 2(b)(viii)) or a Stock Award Agreement, no amendment of the Plan will materially impair a Participant's rights under an outstanding Stock Award without the Participant's written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 422 of the Code regarding incentive stock options or (B) Rule 16b-3.

(viii) To approve forms of Stock Award Agreements for use under the Plan and to amend the terms of any one or more Stock Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Stock Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided, however,* that a Participant's rights under any Stock Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more

Stock Awards without the affected Participant's consent (A) to maintain the qualified status of the Stock Award as an Incentive Stock Option under Section 422 of the Code; (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Stock Award solely because it impairs the qualified status of the Stock Award as an Incentive Stock Option under Section 422 of the Code; (C) to clarify the manner of exemption from, or to bring the Stock Award into compliance with, Section 409A of the Code; or (D) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Stock Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Stock Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(c) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Rule 16b-3 Compliance. The Committee may consist solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such Stock Awards, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Stock Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(s)(iii) below.

(e) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(f) Repricing; Cancellation and Re-Grant of Stock Awards. Neither the Board nor any Committee will have the authority to (i) reduce the exercise, purchase or strike price of any outstanding Option or SAR under the Plan, or (ii) cancel any outstanding Option or SAR that has an exercise price or strike price greater than the then-current Fair Market Value of the Common Stock in exchange for cash or other Stock

Awards under the Plan, unless the stockholders of the Company have approved such an action within 12 months prior to such an event.

(g) Dividends and Dividend Equivalents. Dividends or dividend equivalents may be paid or credited, as applicable, with respect to any shares of Common Stock subject to a Stock Award, as determined by the Board and contained in the applicable Stock Award Agreement; *provided, however*, that (i) no dividends or dividend equivalents may be paid with respect to any such shares before the date such shares have vested under the terms of such Stock Award Agreement, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of such Stock Award Agreement (including, but not limited to, any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to the Company on the date, if any, such shares are forfeited to or repurchased by the Company due to a failure to meet any vesting conditions under the terms of such Stock Award Agreement.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve.

(i) Subject to Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date will not exceed (A) 12,903,727 shares (which number is the sum of (i) the number of shares (2,903,727) subject to the Prior Plans' Available Reserve and (ii) an additional 10,000,000 new shares), *plus* (B) the Prior Plans' Returning Shares, if any, which become available for grant under this Plan from time to time (such aggregate number of shares described in (A) and (B) above, the "***Share Reserve***").

(ii) For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(iii) Subject to Section 3(b), the number of shares of Common Stock available for issuance under the Plan will be reduced by: (A) one share for each share of Common Stock issued pursuant to an Option or SAR with respect to which the exercise or strike price is at least 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date of grant; and (B) two (2.0) shares for each share of Common Stock issued pursuant to a Full Value Award.

(b) Reversion of Shares to the Share Reserve.

(i) Shares Available For Subsequent Issuance. If (A) any shares of Common Stock subject to a Stock Award are not issued because such Stock Award or any portion thereof expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or is settled in cash (*i.e.*, the Participant receives cash rather than stock), (B) any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required for the vesting of such shares, or (C) with respect to a Full Value Award, any shares of Common Stock are reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with such Full Value Award, such shares will again become available for issuance under the Plan (collectively, the "***2018 Plan Returning Shares***"). For each (1) 2018 Plan Returning Share subject to a Full Value Award or (2) Prior Plans' Returning Share subject to a stock award other than a Prior Plans' Appreciation Award, the number of shares of Common Stock available for issuance under the Plan will increase by two (2.0) shares.

(ii) Shares Not Available For Subsequent Issuance. Any shares of Common Stock reacquired or withheld (or not issued) by the Company to satisfy the exercise or purchase price of a Stock Award will no longer be available for issuance under the Plan, including any shares subject to a Stock Award that are not delivered to a Participant because such Stock Award is exercised through a reduction of shares subject to such Stock Award (*i.e.*, "net exercised"). In addition, any shares reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with an Option or Stock Appreciation Right or a Prior Plans' Appreciation Award, or any shares repurchased by the Company on the open market with the proceeds of the exercise or strike price of an Option or Stock Appreciation Right or a Prior Plans' Appreciation Award will no longer be available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 25,807,454 shares of Common Stock.

(d) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a "parent corporation" or "subsidiary corporation" thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; provided, however, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any "parent" of the Company, as such term is defined in Rule 405, unless (i) the stock underlying such Stock Awards is treated as "service recipient stock" under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction) or (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from or alternatively comply with the distribution requirements of Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; *provided, however*, that each Stock Award Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Stock Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Stock Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market

Value of the Common Stock subject to the Option or SAR on the date the Stock Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than 100% of the Fair Market Value of the Common Stock subject to the Stock Award if such Stock Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or that otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the Common Stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the "net exercise," (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Stock Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Award Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Stock Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board may determine. In the absence of such a determination by the Board to the contrary, the restrictions set forth in this Section 5(e) on the transferability of Options and SARs will apply. Notwithstanding the foregoing or anything in the Plan or a Stock Award

Agreement to the contrary, no Option or SAR may be transferred to any financial institution without prior stockholder approval.

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (and pursuant to Sections 5(e)(ii) and 5(e)(iii) below) and will be exercisable during the lifetime of the Participant only by the Participant. Subject to the foregoing paragraph, the Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided in the Plan, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulations Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date three months following such termination of Continuous Service (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable

Stock Award Agreement. In addition, unless otherwise provided in a Participant's Stock Award Agreement, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Stock Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date 24 months following such termination of Continuous Service (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Stock Award Agreement for exercisability after the termination of the Participant's Continuous Service (for a reason other than death), then the Participant's Option or SAR may be exercised (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within such period of time ending on the earlier of (i) the date 24 months following the date of death (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of such Option or SAR as set forth in the Stock Award Agreement. If, after the Participant's death, the Option or SAR (as applicable) is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Stock Award Agreement or other individual written agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service is terminated for Cause, the Participant's Option or SAR will terminate immediately upon such termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six months following the date of grant of the Option or SAR (although the Stock Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Stock Award Agreement, in another agreement between the Participant and the Company or an Affiliate, or, if no such definition, in accordance with the Company's or Affiliate's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any

other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARS.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock underlying a Restricted Stock Award may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse, or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement. Notwithstanding the foregoing or anything in the Plan or a Restricted Stock Award Agreement to the contrary, no Restricted Stock Award may be transferred to any financial institution without prior stockholder approval.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Stock Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award that is payable (including that may be granted, vest or be exercised) contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the Participant's completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Board, in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Stock Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

(ii) Board Discretion. The Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon the attainment of any Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for a Performance Period.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (*e.g.*, options or stock appreciation rights with an exercise price or strike price less than 100% of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards granted under Section 5 and this Section 6. Subject to the provisions of the Plan (including, but not limited to, Section 2(g)), the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan the authority required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of a Stock Award or the subsequent issuance of cash or Common Stock pursuant to the Stock Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising a Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of a Stock Award or a possible period in which the Stock Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of a Stock Award to the holder of such Stock Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock issued pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Stock Awards. Corporate action constituting a grant by the Company of a Stock Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Stock Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (*e.g.*, Board consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (*e.g.*, exercise price, vesting schedule or number of shares) that are inconsistent with those in the Stock Award Agreement or related grant documents as a result of a clerical error in the preparation of the Stock Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect terms in the Stock Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to a Stock Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Stock Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Stock Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Stock Award Agreement or any other instrument executed thereunder or in connection with any Stock Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Stock Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company or any Affiliate is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee) after the date of grant of any Stock Award to the Participant, the Board has the right in its sole discretion to (x) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Stock Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Stock Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Stock Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds $100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Stock Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Stock Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of a Stock Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to a Stock Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided, however,* that no shares of Common Stock are withheld with a value exceeding the maximum amount of tax that may be required to be withheld by law (or such other amount as may be permitted while still avoiding classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from a Stock Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Stock Award Agreement.

(i) Electronic Delivery. Any reference herein to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Stock Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company or an Affiliate. The Board is authorized to make deferrals of Stock Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Compliance with Section 409A of the Code. Unless otherwise expressly provided for in a Stock Award Agreement, the Plan and Stock Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Stock Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. To the extent that the Board determines that any Stock Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Stock Award Agreement evidencing such Stock Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and, to the extent applicable, the Plan and Stock Award Agreements will be interpreted in accordance with the requirements of Section 409A of the Code. Notwithstanding anything to the contrary in this Plan (and unless the Stock Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly

traded and a Participant holding a Stock Award that constitutes "deferred compensation" under Section 409A of the Code is a "specified employee" for purposes of Section 409A of the Code, no distribution or payment of any amount will be made upon a "separation from service" before a date that is six months following the date of such Participant's "separation from service" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) or, if earlier, the date of the Participant's death.

(l) Clawback/Recovery. All Stock Awards granted under the Plan will be subject to recoupment in accordance with any clawback provisions in a Participant's employment agreement or other agreement with the Company or any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in a Stock Award Agreement as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for "good reason" or "constructive termination" (or similar term) under any agreement with the Company or an Affiliate.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), and (iii) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the Stock Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service, *provided, however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transaction. The following provisions will apply to Stock Awards in the event of a Corporate Transaction unless otherwise provided in the Stock Award Agreement or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Corporate Transaction, then, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Corporate Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Corporate Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective date of the Corporate Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction; *provided, however*, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Corporate Transaction, which exercise is contingent upon the effectiveness of such Corporate Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Corporate Transaction, over (B) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be zero ($0) if the value of the property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Corporate Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

(d) Change in Control. A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will occur.

10. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. No Incentive Stock Option will be granted after the tenth anniversary of the earlier of (i) the date the Plan is adopted by the Board, or (ii) the date the Plan is approved by the stockholders of the Company. No Stock Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) No Impairment of Rights. Suspension or termination of the Plan will not materially impair rights and obligations under any Stock Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan.

11. EFFECTIVE DATE OF PLAN.

This Plan will become effective on the Effective Date.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS.

As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(b) "***Board***" means the Board of Directors of the Company.

(c) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(d) "***Cause***" will have the meaning ascribed to such term in any written agreement between the Participant and the Company or an Affiliate defining such term and, in the absence of such agreement, such term will mean, with respect to a Participant and for purposes of the application of this Plan, the occurrence of any of the following events: (i) such Participant's conviction of, or plea of no contest with respect to, any crime involving fraud, dishonesty or moral turpitude; (ii) such Participant's attempted commission of or participation in a fraud or act of dishonesty against the Company or an Affiliate that results in (or might have reasonably resulted in) material harm to the business of the Company or an Affiliate; (iii) such Participant's intentional, material violation of any contract or agreement between the Participant and the Company or an Affiliate, or any statutory duty the Participant owes to the Company or an Affiliate; or (iv) such Participant's conduct that constitutes gross misconduct, insubordination, incompetence or habitual neglect of duties and that results in (or might have reasonably resulted in) material harm to the business of the Company or an Affiliate. The determination that a termination of the Participant's Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Stock Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or an Affiliate or such Participant for any other purpose.

(e) "***Change in Control***" will be deemed to have occurred upon the first to occur of an event set forth in any one of the following paragraphs:

(i) As a result of any merger or consolidation, the voting securities of the Company outstanding immediately prior thereto represent (either by remaining outstanding or by being converted into voting securities of the surviving or acquiring entity) less than 49% of the combined voting power of the voting securities of the Company or such surviving or acquiring entity outstanding immediately after such merger or consolidation;

(ii) during any period of twenty-four consecutive calendar months, the individuals who at the beginning of such period constitute the Board, and any new directors whose election by such Board or nomination for election by stockholders was approved by a vote of at least two-thirds of the members of such Board who were either directors on such Board at the beginning of the period or whose election or nomination for election as directors was previously so approved, for any reason cease to constitute at least a majority of the members thereof;

(iii) any individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Exchange Act) shall become the beneficial owner (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of more than 20% of the then outstanding shares of Common Stock of the Company;

(iv) any sale of all or substantially all of the assets of the Company; or

(v) the complete liquidation or dissolution of the Company.

Notwithstanding the foregoing, if a Change in Control constitutes a payment event with respect to any Stock Award which provides for the deferral of compensation and is subject to Section 409A of the Code, the transaction or event with respect to such Stock Award must also constitute a "change in control event," as defined in Treasury Regulation §1.409A-3(i)(5) to the extent required by Section 409A.

The Committee shall have full and final authority, which shall be exercised in its discretion, to determine conclusively whether a Change in Control of the Company has occurred pursuant to the above definition, and the date of the occurrence of such Change in Control and any incidental matters relating thereto.

Notwithstanding the foregoing, a Change in Control shall not be deemed to occur solely because the threshold voting power of the Company's then outstanding securities in Section 13(e)(i) or (iii) is acquired by (A) a trustee or other fiduciary holding securities under one or more employee benefit plans maintained by the Company or any of its subsidiaries or (B) any corporation which, immediately prior to such acquisition, is owned directly or indirectly by the stockholders of the Company in the same proportion as their ownership of stock in the Company immediately prior to such acquisition.

For the avoidance of doubt, the term Change in Control shall not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company.

Notwithstanding the foregoing or any other provision of this Plan, the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant shall supersede the foregoing definition with respect to Stock Awards subject to such agreement; provided, however, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition shall apply.

(f) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(g) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(h) "***Common Stock***" means the common stock of the Company.

(i) "***Company***" means Geron Corporation, a Delaware corporation.

(j) "***Consultant***" means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a "Consultant" for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company's securities to such person.

(k) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Director or Consultant or

a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, will not terminate a Participant's Continuous Service; *provided, however,* that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Consultant of an Affiliate or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in a Stock Award only to such extent as may be provided in the Company's or Affiliate's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(l) "***Corporate Transaction***" means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale, lease or other disposition of all or substantially all of the assets of the Company;

(ii) a sale or other disposition of at least ninety percent (90%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction in which the Company is not the surviving corporation; or

(iv) a reverse merger, consolidation or similar transaction in which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

Notwithstanding the foregoing definition or any other provision of this Plan, the term Corporate Transaction will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company.

(m) "***Director***" means a member of the Board.

(n) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(o) "***Effective Date***" means the effective date of this Plan document, which is the date of the annual meeting of stockholders of the Company held in 2018, provided this Plan is approved by the Company's stockholders at such meeting.

(p) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(q) "***Entity***" means a corporation, partnership, limited liability company or other domestic or foreign entity.

(r) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(s) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(t) "***Full Value Award***" means any Stock Award granted under this Plan, other than an Option or SAR that has a per share exercise or strike price that is at least 100% of the Fair Market Value of the Common Stock on its original date of grant.

(u) "***Incentive Stock Option***" means an option granted pursuant to Section 5 that is intended to be, and that qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(v) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("***Regulation S-K***")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(w) "***Nonstatutory Stock Option***" means any option granted pursuant to Section 5 that does not qualify as an Incentive Stock Option.

(x) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(y) "***Option***" means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(z) "***Option Agreement***" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(aa) "***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(bb) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(cc) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(dd) "***Own,***" "***Owned,***" "***Owner,***" "***Ownership***" means a person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ee) "***Participant***" means a person to whom a Stock Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(ff) "***Performance Criteria***" means the one or more criteria that the Board shall select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that shall be used to establish such Performance Goals may be based on any one of, or combination of, the following: (i) net earnings (either before or after one or more of the following: (A) interest, (B) taxes, (C) depreciation and (D) amortization); (ii) gross or net sales or revenue; (iii) net income (either before or after taxes); (iv) adjusted net income; (v) operating earnings or profit; (vi) cash flow (including, but not limited to, operating cash flow and free cash flow); (vii) return on assets; (viii) return on capital; (ix) return on stockholders' equity; (x) total stockholder return; (xi) return on sales; (xii) gross or net profit or operating margin; (xiii) costs; (xiv) funds from operations; (xv) expenses; (xvi) working capital; (xvii) earnings per share; (xviii) adjusted earnings per share; (xix) price per Share; (xx) regulatory body approval for commercialization of a product; (xxi) positive results from clinical trials; (xxii) initiation of clinical trials; (xxiii) implementation, completion or maintenance of critical projects or relationships; (xxiv) closing of significant financing; (xxv) execution or completion of strategic initiatives; (xxvi) market share; (xxvii) economic value; (xxviii) cash flow return on capital; (xxix) return on net assets; and (xxx) other measures of performance selected by the Board. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement. The Board shall, in its sole discretion, define the manner of calculating the Performance Criteria it selects to use for such Performance Period.

(gg) "***Performance Goals***" means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. **[**The Board may, in its sole discretion, provide that one or more objectively determinable adjustments shall be made to one or more of the Performance Goals. Such adjustments may include one or more of the following: (i) items related to a change in accounting principle; (ii) items relating to financing activities; (iii) expenses for restructuring or productivity initiatives; (iv) other non-operating items; (v) items related to acquisitions; (vi) items attributable to the business operations of any entity acquired by the Company during the Performance Period; (vii) items related to the disposal of a business or segment of a business; (viii) items related to discontinued operations that do not qualify as a segment of a business under Applicable Accounting Standards; (ix) items attributable to any stock dividend, stock split, combination or exchange of stock occurring during the Performance Period; (x) any other items of significant income or expense which are determined to be appropriate adjustments; (xi) items relating to unusual or extraordinary corporate transactions, events or developments, (xii) items related to amortization of acquired intangible assets; (xiii) items that are outside the scope of the Company's core, on-going business activities; (xiv) items related to acquired in-process research and development; (xv) items relating to changes in tax laws; (xvi) items relating to major licensing or partnership arrangements; (xvii) items relating to asset impairment charges; (xviii) items relating to gains or losses for litigation, arbitration and contractual settlements; (xix) items relating to any other unusual or nonrecurring events or changes in applicable laws, accounting principles or business conditions; or (xx) any other items selected by the Board.

(hh) "***Performance Period***" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Performance Stock Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(ii) "***Performance Stock Award***" means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(jj) "***Plan***" means this Geron Corporation 2018 Equity Incentive Plan.

(kk) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(ll) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(mm) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(nn) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(oo) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(pp) "***Rule 405***" means Rule 405 promulgated under the Securities Act.

(qq) "***Securities Act***" means the Securities Act of 1933, as amended.

(rr) "***Stock Appreciation Right***" or "***SAR***" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(ss) "***Stock Appreciation Right Agreement***" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(tt) "***Stock Award***" means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Stock Appreciation Right, a Restricted Stock Award, a Restricted Stock Unit Award, a Performance Stock Award or any Other Stock Award.

(uu) "***Stock Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(vv) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(ww) "***Ten Percent Stockholder***" means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

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