29th Annual Piper Jaffray Healthcare Conference

November 28-29, 2017
Forward-Looking Statements

Except for the historical information contained herein, this presentation contains forward-looking statements made pursuant to the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. Investors are cautioned that statements regarding: (i) continued conduct by Janssen of IMbark and/or IMerge and any future clinical trials of imetelstat; (ii) potential feedback from ongoing FDA interactions; (iii) any future presentation of data from current clinical trials of imetelstat by Janssen at a major medical conference, including ASH; (iv) that Janssen will conduct an internal data review for IMbark in the first quarter of 2018; (v) potential outcomes of any data reviews conducted by Janssen for IMbark or IMerge; (vi) that median overall survival may be reached in IMbark; (vii) the timing of the protocol-specified primary analysis for IMbark; (viii) that the number of patients enrolled to date in IMbark is adequate to perform the protocol-specified primary analysis and that approximately 20 additional patients in IMerge will be sufficient for decision-making; (ix) data that suggest clinical benefit and potential survival benefit of imetelstat in MF; (x) imetelstat having activity in MF, MDS or any other hematologic myeloid malignancies, including acute myeloid leukemia; (xi) that imetelstat treatment suppresses the malignant clones underlying the disease in hematologic myeloid malignancies; (xii) the safety and efficacy of imetelstat; (xiii) the potential receipt by Geron of additional payments up to a potential total of $900 million for the achievement of development, regulatory and commercial milestones, and royalties from sales of imetelstat under the collaboration agreement with Janssen; (xiv) that imetelstat will succeed in IMbark and IMerge by overcoming all of the clinical safety and efficacy, technical, scientific, manufacturing and regulatory challenges; (xv) whether the FDA or other health authorities have any additional requirements for and/or permit IMbark or IMerge to continue to proceed under the existing protocols or any amendments thereto; (xvi) whether Janssen continues to conduct IMbark or IMerge; (xvii) that 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 projections and expectations; and (xviii) 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, risks and uncertainties related to: (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) whether the FDA or other health authorities have any additional requirements for and/or permit IMbark or IMerge to continue to proceed under the existing protocols or any amendments thereto; (iii) whether Janssen’s ability to collect additional and more mature data from current clinical trials; (iv) whether Janssen continues to conduct IMbark or IMerge; (v) that 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 imetelstat can be applied to any or to multiple hematologic malignancies; (viii) the fact that 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) the ability of Geron and Janssen to protect and maintain intellectual property rights for imetelstat; (x) the 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 other 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 quarterly report on Form 10-Q for the quarter ended September 30, 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.
Inhibiting telomerase in hematologic myeloid malignancies
• Telomerase highly upregulated in malignant progenitor cells

Imetelstat is the first telomerase inhibitor in clinical development
• Molecular responses observed in essential thrombocytemia and remissions in myelofibrosis indicate disease-modifying activity in hematologic malignancies

Collaboration agreement with Janssen since November 2014
• Phase 2 clinical development being conducted by Janssen in myelofibrosis (IMbark) and myelodysplastic syndromes (IMerge)

Financial position provides strategic business options
• ~$113 million in cash and investments as of September 30, 2017
• Ability to support Janssen imetelstat development

Pipeline diversification through possible acquisitions of oncology products, programs or companies
**Telomerase enzyme**
- Comprised of an RNA template component (hTR) and a reverse transcriptase catalytic protein subunit (hTERT)
- Binds to the 3’ strand of DNA and adds TTAGGG nucleotide repeats to offset the loss of telomeric DNA at the end of chromosomes that occurs with each replication cycle

**Highly upregulated in malignant progenitor cells**
- Enabling continued and uncontrolled proliferation
- **Normal progenitor cells**: Telomerase transiently upregulated to support controlled proliferation; not active in somatic cells
Imetelstat
A first-in-class telomerase inhibitor

- **Proprietary:** 13-mer thio-phosphoramidate (NPS) oligonucleotide complementary to hTR, with covalently-bound lipid tail to increase cell permeability/tissue distribution
- **Long tissue residence time** in bone marrow, spleen, liver (0.19 – 0.51 µM observed in human bone marrow at 41 – 45 hours post 7.5 mg/kg dose i.v.)
- **Potent competitive inhibitor of telomerase:** IC50 = 0.5 – 10 nM (cell-free)
- **Target:** malignant progenitor cell proliferation
- **Clinical experience:** more than 500 patients treated in Phase 1 and 2 trials; safety profile generally consistent
  - reported adverse events and laboratory investigations include cytopenias, gastrointestinal symptoms, constitutional symptoms, hepatic biochemistry abnormalities
  - myelosuppression is dose-limiting toxicity observed (managed through dose holds and modification rules)
Hematologic Myeloid Malignancies
Arise from malignant progenitor cells in the bone marrow

- Essential Thrombocytopenia (ET)
  - Platelets (abnormal)

- Polycythemia Vera (PV)
  - Red blood cells (abnormal)

- Myelofibrosis (MF)
  - Collagen and reticulin fibers (fibrosis)

- Myelodysplastic Syndromes (MDS)
  - Immature blood cells

- Acute Myelogenous Leukemia (AML)
  - Immature white cells

- ~3,000 cases diagnosed per year in the US
- ~13,000 people in the US living with MF
- ~70% of patients have high/intermediate-2 risk disease

- ~12,000 cases diagnosed per year in the US
- ~60,000 people in the US living with MDS
- ~70% of patients have lower risk disease

- ~20,000 cases diagnosed per year in the US
- ~27% of patients diagnosed are alive after 5 years

Mehta et al, Leuk Lymphoma 2014, 55:595-600
Gangat et al, J Clin Oncol 2011, 29:392-397
Fenaux et al, Blood 2013; 121:4280-4286
NCI SEER database: www.seer.cancer.gov
Myelofibrosis
Disease characteristics

- **Malignant clonal proliferation** and atypical megakaryocytic hyperplasia leads to bone marrow fibrosis and impaired hematopoiesis

  - **Fibrosis** thought to be induced by inflammatory cytokines produced by megakaryocytes originating from the malignant progenitor cell clone

  - **Constitutional symptoms** (e.g., fever, weight loss, night sweats, pruritus) present in approximately 35% of patients also thought to be due to cytokines produced by malignant megakaryocytes

  - Impaired bone marrow hematopoiesis shifts blood production to spleen and liver (palpable splenomegaly in approximately 80% of patients)

- **Serious and life-threatening** illness

  - Leukemic transformation to AML (blast-phase MF)

  - Thrombohemorrhagic complications associated with dysfunctional hematopoiesis

  - Median survival: ~1-3 years for intermediate-2 or high risk disease

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Tefferi, JCO 2005; 23:8520-8530
Tefferi, Mayo Clin Proc 2012; 87:25-33
Gangat et al, JCO 2011; 29:392-397
Imetelstat MF Pilot Study
Initial clinical data suggest transformative potential

**Broad High/Int-2 Risk MF population**
- including 48% with prior JAKi exposure

**Remissions suggest suppression of malignant clones**
- CR or PR: 21.2% (7/33)
- molecular remissions observed in CR patients

**Durable responses observed**
- median CR duration: 18 months (range 7-20+)

**Spleen responses (by palpation lasting >12 weeks): 34.8% (8/23)**
- in JAKi exposed subgroup: 27.3% (3/11)

**Myelosuppression is the dose-limiting toxicity observed**
- cytopenias most frequently reported adverse event
- managed through dose hold rules and dose modifications

Tefferi et al, NEJM 2015;373:908-919
Tefferi, et al. ASH 2014
Current Treatments for High/Int-2 Risk MF
No drug approved for patients after ruxolitinib

Symptoms or splenomegaly
• treatment with ruxolitinib
  - oral JAK1/JAK2 inhibitor
• stay on drug as long as tolerated
  - conventional drugs (e.g., hydroxyurea, steroids, immunomodulatory agents, androgens) viewed as ineffective, especially in advanced disease

5-year discontinuation rate is ~75% (Phase 3 trials: COMFORT I & II)
• major reasons:
  - suboptimal response
  - loss of therapeutic effect

After failure or discontinuation median survival is ~7-14 months
• 14 mo median OS (95% CI: 10-18 months) in front-line MF patients discontinued from ruxolitinib in Phase 1/2 trial (n=86)
• 7 mo median OS after discontinuation from ruxolitinib based on analysis of 3rd party claims data bases (n=430)

Harrison et al, ASH 2015
Gupta et al, ASCO 2016
Newbury et al, Blood 2017 (pre-published online)
Mehra et al, ASH 2016
A multi-center, open label, Phase 2 clinical trial being conducted by Janssen

- **Define proper dosing** by evaluating potential therapeutic range of the drug
  - 4.7 mg/kg q3w: lowest dose where telomerase inhibition is predicted
  - 9.4 mg/kg q3w: max dosing regimen derived from the MF Pilot Study
- **Confirm efficacy in high unmet need population** using current established regulatory endpoints

- First patient dosed in September 2015; over 100 patients enrolled as of October 2016 (enrollment suspended)

**Efficacy:**
- Spleen response rate* and symptom response rate**
- CR/PR and CI+, anemia response per 2013 IWG-MRT criteria, duration of responses, overall survival (OS)

**Exploratory:**
- Cytogenetic and molecular responses, leukemia free survival

More information can be found on ClinicalTrials.gov (NCT02426086)
Data from April 2017
IMbark Internal Review

Data support 9.4 mg/kg as an appropriate starting dose for relapsed/refractory MF patients

Safety profile consistent with previous imetelstat clinical trials in hematologic myeloid malignancies
  • No new safety signals were identified

Spleen volume response (SVR) rate in 9.4 mg/kg dosing arm was less than reported in front-line MF patients in trials of JAK inhibitors

Activity within multiple outcome measures was observed suggesting clinical benefit:
  • Range of spleen volume reductions
  • Decreases in Total Symptoms Score (TSS)
  • Improvements in hematologic parameters, such as anemia and peripheral blood counts

Data suggest a potential overall survival benefit associated with imetelstat treatment
Current Status of IMbark
Trial ongoing to evaluate more mature data including survival

Patients remaining in the treatment phase may continue to receive imetelstat
- Enrollment of new patients remains suspended
- The total number of patients enrolled to date is adequate to perform primary analysis

All safety and efficacy assessments to be conducted as planned in the protocol
- Including assessment of a potential survival benefit associated with imetelstat treatment
- As of October 2017, median OS has not been reached
- Internal data review expected in Q1 2018

Primary analysis to begin at earlier of either a pre-specified number of deaths or the end of Q3 2018
- Completion of this primary analysis prompts Continuation Decision by Janssen
Myelodysplastic Syndromes

Disease characteristics

- **Diverse group of clonal hematologic malignancies** with **disordered and ineffective production of the myeloid lineage** in the bone marrow characterized by abnormal cell morphology and counts (anemia and other cytopenias)
- Median age at diagnosis is ~70 years
- Up to 30% of patients progress to acute leukemia (AML)

Lower risk MDS
- **IPSS Low and Intermediate-1 Risk categories**
- Median overall survival is 3.5 - 5.7 years
- **Chronic anemia** is the predominant clinical problem and many patients become dependent on red blood cell transfusions
- **Transfusion dependency** may lead to iron overload and is associated with **shorter survival** (2 units red blood cells per month may reduce life expectancy by 50%) and **increased risk of transformation to AML**

Sekeres, Natl Compr Canc Netw 2011; 9:57-63
Malcovati et al, JCO 2007; 25:3503-3510
Greenberg et al, Blood 1997; 89:2079-2028
Bejar & Steensma, Blood 2014; 124:2793-2803
Current Treatments for Lower Risk MDS
Chronic anemia remains an unmet need

Erythropoiesis stimulating agents (ESAs)
• improvement in anemia in ~50% of patients
• median duration: ~2 years

Patients dependent on red blood cell transfusions

Del(5q)* patients
Lenalidomide
• ≥8-week RBC-TI: ~67%

Non-Del(5q) patients
Lenalidomide
• ≥8-week RBC-TI: ~27%

Hypomethylating agents (HMAs; e.g., azacytidine)
• ≥8-week RBC-TI: ~17%

Clinical trials (e.g., imetelstat)

*Cytogenetic abnormality (5-20% of patients)
Focusing on red blood cell transfusion dependency

IMerge: Original trial design

A multi-center, two part clinical trial being conducted by Janssen

- **Objectives:**
  - **Part 1 (Phase 2)** to evaluate safety and efficacy of imetelstat to advance to Part 2 based on positive assessment of benefit-risk profile in significant unmet medical need population
  - **Part 2 (Phase 3)** to compare imetelstat to placebo using an established regulatory endpoint

- All lower risk MDS subtypes eligible; first patient dosed in January 2016

**Transfusion Dependent Patients with IPSS Low/Intermediate-1 Risk MDS that is Relapsed/Refractory to Erythropoiesis Stimulating Agent (ESA) Treatment (N = ~200)**

**Part 1**

- **Phase 2:** single arm, open label (n = ~30)
  - Imetelstat 7.5mg/kg every 4 weeks

**Part 2**

- **Phase 3:** randomized, double-blind, placebo-controlled (n = ~170)
  - Imetelstat (n = ~115)
    - 7.5mg/kg every 4 weeks
  - Placebo (n = ~55)

Supportive care permitted in both arms: RBC transfusions, myeloid growth factors per investigator discretion as clinically needed and local guidelines

1° Efficacy: Red Blood Cell (RBC) Transfusion Independence (TI) ≥8wks

2° Efficacy: RBC TI ≥24 weeks; time to and duration of RBC TI; hematologic improvement (HI); CR or PR per 2006 IWG criteria, RBC transfusion requirement; myeloid growth factor use/dose; OS and time to progression to AML

More information on ClinicalTrials.gov (NCT02598661)
Preliminary RBC-TI Data Promising
Among 32 lower risk MDS patients in Part 1 of IMerge as of May 2017

Increased RBC-TI rate and durability in a 13-patient subset who were naïve to either HMA or lenalidomide treatment and non-del(5q) compared to overall trial population

<table>
<thead>
<tr>
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<th>HMA and len naïve and non-del(5q) (n=13)</th>
<th>Overall trial population (n=32)</th>
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<tbody>
<tr>
<td>≥8-week RBC-TI</td>
<td>54%</td>
<td>34%</td>
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<tr>
<td>≥24-week RBC-TI</td>
<td>31%</td>
<td>16%</td>
</tr>
<tr>
<td>HI-Erythroid</td>
<td>69%</td>
<td>63%</td>
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Safety profile consistent with previous imetelstat clinical trials in hematologic myeloid malignancies

- No new safety signals were identified
- Reversible cytopenias were the most frequent adverse events, including Grade ≥3 and 4 neutropenia in 66% and 41% of patients, respectively, and grade ≥3 and 4 thrombocytopenia in 50% and 19% of patients, respectively, which were generally manageable with dose reduction or delays

Detailed results will be presented at the 59th ASH Annual Meeting in Atlanta on December 11

- Abstract #4256: Efficacy and Safety of Imetelstat in RBC Transfusion-Dependent (TD) IPSS Low/Int-1 MDS Relapsed/Refractory to Erythropoiesis-Stimulating Agents (ESA) (IMerge)
Current Status of IMerge
Part 1 enrollment expanded in target patient population

- Part 1 subset (n=13):
  - Naïve to either HMA or lenalidomide and non-del(5q)
  - RBC-TI (≥8-wks): 53.8%

- Part 1 overall population (n=32)
  - RBC-TI (≥8-wks): 34.4%

- Enroll additional n~20 patients:
  - Naïve to either HMA or lenalidomide and non-del(5q)

• Increase experience and confirm benefit-risk of imetelstat dosed at 7.5 mg/kg every four weeks in refined target patient population
• First patient dosed in November 2017

Decision to initiate Part 2 by Janssen is expected to be contingent on and informed by:

• Feedback from ongoing FDA interactions
• Primary analysis of IMbark, expected to begin no later than the end of Q3 2018
• Continuation Decision by Janssen
• Data from the expanded Part 1
• Other imetelstat program information
Potential Pipeline Diversification

General profile of candidates:
• Oncology focused
• Ideally late preclinical or early clinical stage
• Credible target and/or demonstration of preclinical or clinical proof-of-concept
• Target relevance in multiple indications
• Potential for “rapid”/low cost path to approval
• Attractive technology platform or early pipeline
• Strong science-based research capability
• Complementarity of leadership team

Candidates include European companies with more limited financing opportunities than equivalent US companies
Expected Timing for Key Milestones

2017

- **Q4**: First patient dosed in expanded IMerge Part 1
- **Q4**: Data from IMerge Part 1 (n=32 MDS patients) to be presented at ASH Annual Meeting

2018

- **Q1**: IMbark internal data review expected
- Earlier of **Q3 or when a pre-specified number of death events occur**: IMbark primary analysis to begin
- **Q4’18/Q1’19**: Latest time for Janssen Continuation Decision
- **Q4’18/Q1’19**: Janssen decision whether to initiate IMerge Part 2

Projected timelines depend on clinical trial continuation
Partnership with Janssen
Exclusive worldwide collaboration for imetelstat

**First Stage**

*IMbark (Phase 2 MF trial)*

- Janssen conducting IMbark and IMerge
- Following primary analysis of IMbark, Janssen to provide Continuation Decision (Notification to Geron whether Janssen elects to maintain license rights and continue the development of imetelstat in any indication)

**IMerge (Phase 2/3 MDS trial)**

- Geron has Opt-In right to share further US development and promotion costs
- Under Opt-In, Geron may provide 20% of US selling effort with sales force personnel, in lieu of funding 20% of US promotion costs

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**First Stage Economics**

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<tr>
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<th><strong>Upfront</strong></th>
<th><strong>Cost Share</strong></th>
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<tr>
<td></td>
<td>$35M</td>
<td>50% Geron 50% Janssen</td>
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**Continuation Stage**

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<tr>
<th>Phase 3: MF, MDS</th>
<th>Phase 2: Additional exploratory indications</th>
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**Continuation Stage Economics**

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<th>Opt-In</th>
<th>Opt-Out</th>
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<tbody>
<tr>
<td>Cost Share</td>
<td>20% Geron 80% Janssen</td>
<td>100% Janssen</td>
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<td>Continuation/US Rights Fee</td>
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<td>$135M</td>
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<td>Dev/Reg Milestones</td>
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<td>up to $415M</td>
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<td>Sales Milestones</td>
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<td>up to $350M</td>
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<td>Royalty % Tier**</td>
<td>Mid-teens to low twenties</td>
<td>Double digit to mid-teens</td>
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**Calculated on worldwide net sales in any countries where regulatory exclusivity exists or there are valid claims under patent rights covering composition of matter or methods of use exclusively licensed to Janssen**

Janssen can terminate the agreement at any time
Thank you

If you have any questions, please contact us:
investor@geron.com