Forward Looking Statements

This presentation contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, as amended. These forward-looking statements include, but are not limited to, the design of clinical trials and expected timing for release of data; the anticipated clinical development milestones and other potential value drivers in the future; the expected benefits of our collaborations, the expanded capability of Sangamo’s technologies; the research and development of novel gene-based therapies and the application of Sangamo’s ZFP technology platform to specific human diseases; successful manufacturing of our product candidates; and the potential of Sangamo’s genome editing technology to safely treat genetic diseases. These statements are based upon our current expectations and speak only as of the date hereof. Our actual results may differ materially and adversely from those expressed in any forward-looking statements as a result of various factors and uncertainties. Factors that could cause actual results to differ include, but are not limited to, the dependence on the success of clinical trials of lead programs, the lengthy and uncertain regulatory approval process, uncertainties related to the timing of initiation and completion of clinical trials, whether clinical trial results will validate and support the safety and efficacy of Sangamo’s therapeutics, and the reliance on partners and other third-parties to meet their obligations. Further, there can be no assurance that the necessary regulatory approvals will be obtained or that Sangamo and its partners will be able to develop commercially viable gene-based therapeutics. Actual results may differ from those projected in forward-looking statements due to risks and uncertainties that exist in Sangamo’s operations. These risks and uncertainties are described more fully in Sangamo’s Annual Report on Form 10-K and Quarterly Reports on Form 10-Q as filed with the Securities and Exchange Commission. Forward-looking statements contained in this presentation are made as of the date hereof, and Sangamo undertakes no obligation to update such information except as required under applicable law.
Agenda

Welcome
McDavid Stilwell
VP, Corporate Communications and Investor Relations

Q2 2018 Review and Recent Highlights
Sandy Macrae
Chief Executive Officer

Clinical Development
Ed Conner, MD
Chief Medical Officer

Research and Technology
Ed Rebar, PhD
Chief Technology Officer

Q2 2018 Financial Review
Kathy Yi
Chief Financial Officer
Corporate Overview and Recent Highlights

Sandy Macrae
Chief Executive Officer
We are committed to translating ground-breaking science into genomic therapies that transform patients’ lives
Sangamo is investing across four technology platforms for genomic medicines

Gene Therapy  Genome Editing  Cell Therapy  Gene Regulation
### Strategic collaborations with leading biopharma companies in select disease areas

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<tr>
<th>Partner</th>
<th>Platform</th>
<th>Scope</th>
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<td>Kite-Gilead</td>
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<td>Allogeneic and autologous cell therapies for <strong>oncology</strong></td>
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<td><img src="image" alt="Genetic Testing" /></td>
<td>Gene therapies for <strong>hemophilia A</strong></td>
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<td>Bioverativ-Sanofi</td>
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<td>Shire</td>
<td><img src="image" alt="Gene Therapy" /></td>
<td>Gene therapy for <strong>Huntington’s disease</strong></td>
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**Sangamo Therapeutics**

7
Recent accomplishments demonstrate strong progress toward evolution of new Sangamo

- Announced proposed acquisition of TxCell, positioning Sangamo as a leader in CAR-Treg development
- Announced preliminary results from Phase 1/2 Alta Study evaluating SB-525 for hemophilia A
- Treated 1st patient in SB-318 Phase 1/2 EMPOWERS Study for MPS I
- Treated 6th patient in SB-913 (MPS II) and 5th patient in SB-525 (hemophilia A) Phase 1/2 clinical studies
- Received CTA from EMA to enroll subjects in the U.K. into ongoing SB-318 (MPS I) and SB-913 (MPS II) Phase 1/2 studies
- Enrolled 1st patient in ST-400 Phase 1/2 Thales Study for beta-thalassemia
- Appointed Karen Smith, MD, PhD to Sangamo’s Board of Directors
Our vision to develop and commercialize proprietary products across three therapeutic areas

- **Inherited Metabolic Diseases**
  - Rare Patient Populations
- **Central Nervous System**
  - Rare and Large Patient Populations
- **Immunology**
  - Large Patient Populations

**Product Development**

- Discovery
- Pre-clinical
- Phase I/II Clinical
- Phase III / Commercial

**Technologies**

- Genome Editing
- Cell Therapy
- Gene Regulation
- Gene Therapy
Sangamo + TxCell: Taking the lead in CAR-Treg cell therapy development

Seize leadership of CAR-Treg cell therapy in immunology
- Acquire lead therapeutic program in engineered Tregs (regulatory T cells), exclusive access to CARs (chimeric antigen receptors) and relationships with KOLs
- Synergy between Sangamo’s ex vivo gene editing capabilities and TxCell’s expertise in Treg biology / manufacturing holds the potential for innovative cell therapies for autoimmune diseases

Leapfrog the competition, positioning Sangamo at the forefront of this emerging field
- Acquisition accelerates Sangamo’s immunology strategy by two years
- 1st CAR-Treg clinical trial in 2019; ZFN-edited CAR-Treg programs to follow

Capture the next big opportunity in cell therapy
- Leverage precision, efficiency and specificity of ZFN gene editing platform
- Expect to be the first in clinic with a CAR-Treg candidate, with the goal of creating next-generation treatments for rare and highly prevalent diseases (e.g. multiple sclerosis, Crohn’s disease, diabetes)
- Antigen-specific, tissue targeted CAR-Tregs have the potential to overcome limitations of systemically-acting immunosuppressants
Market opportunity for Tregs holds significant potential in autoimmune diseases

Several autoimmune diseases with large patient populations and high unmet need present significant market opportunities for CAR-Treg cell therapies.

- Multiple Sclerosis
- Neuromyelitis Optica
- Systemic Sclerosis
- Autoimmune Hepatitis
- Type 1 Diabetes Mellitus
- Vitiligo
- Crohn’s Disease
- Rheumatoid Arthritis
Sangamo Clinical Development

Ed Conner, MD
Chief Medical Officer

SB-525: Hemophilia A
SB-913: MPS II
Sangamo’s AAV cDNA gene therapy platform: potential for potent therapeutic solutions for adults with rare monogenic diseases

Packaging into AAV vectors

Delivery

In the liver
SB-525: hemophilia A clinical program summary

Phase I/II Open Label Study

Patients
Up to 20 adult (18+) males with severe hemophilia A

Cohorts
6 potential dose cohorts

Data
Next update expected at ASH 2018

Clinical Trial Status
- IND open
- Study initiated
- 11 sites active
- 5 subjects treated

Regulatory Designations
- **US**
  - Orphan Drug
  - Fast Track
- **EMA**
  - Orphan Medicinal Product
Sangamo announces positive preliminary data from the Alta Study evaluating SB-525 gene therapy for hemophilia A

• SB-525 has been generally well tolerated
  – No treatment-related serious adverse events
  – No use of tapering courses of oral steroids

• 1st patient in third dose cohort has achieved a therapeutic level of Factor VIII expression and elimination of spontaneous bleeds and factor usage

• Dose-dependent effect has been observed in the study, with patients in 2nd cohort reporting reduced use of factor replacement
In Vivo genome editing of albumin: harnessing the liver’s most highly expressed locus

Packaging into AAV vectors

- zinc finger nucleases
- transgene
- AAV vectors

Delivery

In the liver

- albumin gene
- transgene
- Strong albumin promoter
SB-913: MPS II clinical program summary

**Phase I/II Open Label Study**

**Patients**
Up to 9 adult males (18+)
with attenuated MPS II

**Cohorts**
3 dose cohorts

**Data**
Preliminary data expected at SSIEM 2018

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**U.S. Clinical Trial Status**
- INDs open
- Study initiated
- 7 sites active
- 6 subjects treated (2 at highest dose)

**U.K. Clinical Trial Status**
- CTA granted
- Plan to initiate U.K. study by YE 2018

**Regulatory Designations**
- Orphan Drug
- Fast Track
- Rare Pediatric Disease
- Orphan Medicinal Product
An ideal therapy for MPS II prolongs exposure of tissues to enzyme by maintaining continuous, stable levels in the circulation

Normal Serum IDS Enzyme
Steady state established as IDS enzyme is secreted and specific receptors mediate uptake

Transient ERT Exposure Gradient
Bolus of enzyme infused IV weekly, rapidly increases IDS exposure around tissues for a short period of time

Prolonged exposure to extracellular enzyme increases likelihood of receptor-mediated uptake into cells — a key advantage for a genome editing approach
Weekly ERT infusions do not provide sustained exposure of IDS to the tissues, enzyme is rapidly cleared from circulation within hours

- Patients on ERT receive a large bolus of enzyme once a week.
- ERT half-life is approximately 60 minutes\(^1\), rapidly cleared from system.
- Large amount of enzyme is taken up by the liver, due to high-capacity, low-specificity receptors on liver cell surface.
- For significant period of time (i.e. 5-6 days out of the week), patients’ enzyme levels are very low or absent.
Genome editing designed to produce IDS continuously to increase enzyme exposure for receptor-mediated uptake

1. Edited liver cells steadily release IDS enzyme into the circulation

2. Stable enzyme levels in circulation increase IDS exposure in tissues throughout the body, facilitating receptor-mediated uptake of enzyme

3. IDS enzyme is transported to lysosomes to metabolize GAGs

Goal is for continuous IDS production to stabilize or reduce GAG accumulation

Continuous IDS exposure may also facilitate uptake in tissues with limited vascularization
The goal of ZFN-mediated genome editing for IDS enzyme production and urinary GAG levels

- A single dose of SB-913 is designed to insert a corrective IDS gene into the albumin locus in liver cells with the goal of releasing therapeutic levels of IDS enzyme into the bloodstream.

- In contrast to ERT, which provides a large bolus of enzyme for a short period of time, SB-913 is designed to allow continuous, stable levels of IDS enzyme concentrations in circulation.

- Enzyme uptake into the tissues is a slow process – stable levels of IDS in the circulation may prolong the exposure of the tissues to enzyme, allowing a greater chance that IDS enzyme will be taken up via receptor-mediated uptake.

- The potential clinical efficacy of SB-913 will be assessed by demonstrating stabilization of urinary GAGs upon withdrawal of ERT.
Sangamo Research

Ed Rebar, PhD
Chief Technology Officer

Metrics for therapeutic genome editing
Recent milestones in platform performance
ZFNs: The platform of choice for therapeutic genome editing

**Precision** | ability to target any desired nucleotide in the genome

**Efficiency** | ability to edit at the desired target nucleotide

**Specificity** | ability to edit the targeted nucleotide without editing elsewhere in the genome
ZFNs: The platform of choice for therapeutic genome editing
Ex vivo ZFN-mediated editing of T cells results in 97% on-target modification with no detectable off-target cleavage

On-target activity assessment:

- % DNA modification (via sequencing): 97% indels for ZFN-treated, 0% indels for Control

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- % functional knockout (via FACS): 97% CD3-neg for ZFN-treated, 1.2% CD3-neg for Control

- T cells edited using clinically relevant delivery conditions
- On-target activity assessed via deep-sequencing and also FACS for surface expression of TCRα/CD3 complex
- Specificity assessed via oligonucleotide capture analysis, followed by deep sequencing of candidate off-target loci
- High nuclease levels used for both capture & follow-up analyses (90% and 97% on-target indels)
Sangamo plans to develop next generation CAR-Treg products with ZFN multiplex editing

**Increase Efficacy & Potency**
- Target tissue-specific antigen(s) w/CAR
- Promote localization to disease site(s) with chemokine receptors
- Bolster immunosuppressive function

**Increase Persistence & Stability**
- Increase Treg proliferation and durability
- Improve CAR-Treg stability and safety

**Off-The-Shelf Approach**
- Genetic engineering to allow allogeneic application of CAR-Tregs
Financial Review and Strategic Update

Kathy Yi
Chief Financial Officer

Q2 2018 financial results
2018 financial guidance
TxCell transaction
### Q2 2018 financial results and year-end guidance

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<td>Ending Cash Balance</td>
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**Year End 2018 Guidance**

Cash and investments: >$380M
TxCell transaction economics and next steps

• Consideration of €72 million (€2.58 per share) to acquire 100% of equity interests on debt-free and cash-free basis

• Next steps:
  – September 2018: expected to finalize purchase of 53% of shares following review by French financial regulatory authorities
  – Launch simplified tender offer for shares not purchased previously
  – Complete procedure for remaining shares

• Q4 2018: expected acquisition completion
Closing Remarks

Sandy Macrae
Chief Executive Officer
Thank you.