

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Synthetic Biology: At the Crossroads of Genetic Engineering and Human Therapeutics (C5)

March 29-April 1, 2020 • Beaver Run Resort • Breckenridge, CO, USA

Scientific Organizers: Jose M. Lora and Timothy K. Lu

Sponsored by Astellas Pharma Inc., BlueRock Therapeutics and Editas Medicine

Discounted Abstract & Scholarship Deadline: November 21, 2019 / Abstract Deadline: December 19, 2019 / Discounted Registration Deadline: January 28, 2020

SUNDAY, MARCH 29

Arrival and Registration

MONDAY, MARCH 30

Welcome and Keynote Address

Martin Fussenegger, ETH Zürich, Switzerland
Cell-Based Therapies of the Future

Engineering Life with Synthetic Biology Tools and Principles

Yvonne Y. Chen, University of California, Los Angeles, USA
Synthetic Biology in Immunotherapy

Joshua N. Leonard, Northwestern University, USA
Enabling Design-Driven Medicine with Programmable Cell-Based Therapies

Zhen Xie, Tsinghua University, China
Oncolytic Adenovirus Programmed by Synthetic Gene Circuit for Cancer Immunotherapy

Short Talks Chosen from Abstracts

Gene Circuits as Modules for Living Medicines

Timothy K. Lu, Massachusetts Institute of Technology, USA
Engineered Gene Circuits for Diagnostics and Therapeutics

Tara L. Deans, University of Utah, USA
Engineering Novel Therapeutic Delivery Devices with Synthetic Biology

Jeff Hasty, University of California, San Diego, USA
Modulating Bacterial Populations with Synthetic Biology

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, MARCH 31

Bioengineering Cells and Organs in Disease

Clodagh C. O'Shea, The Salk Institute for Biological Studies, USA
Talk Title to be Announced

Junghae Suh[†], Biogen, USA
Talk Title to be Announced

Cammie Lesser, Massachusetts General Hospital, USA
Engineering Bacteria for the Control of Intestinal Inflammation

Luis Ángel Fernández, National Center of Biotechnology - CSIC, Spain
Engineering Synthetic Adhesins and Injectisomes in E. coli for Tumor Cell Targeting and Protein Injection

Short Talks Chosen from Abstracts

Synthetic Therapeutics: Eukaryotic Cells, Bacteria and Viruses

Samira Kiani, Arizona State University, USA
Mammalian Synthetic Biology

Jose M. Lora, enGene, Inc, USA
Synthetic Biology for Bacterial Cell Therapy

Howard L. Kaufman, Replimune Group Inc, USA
New Strategies for Improving the Therapeutic Potential of Oncolytic Viruses in Cancer and Other Diseases

Short Talks Chosen from Abstracts

Poster Session 2

WEDNESDAY, APRIL 1

Synthetic Biology: Industry Perspective

Paul Miller, Synlogic, Inc., USA
Targeting Metabolic Diseases with Synthetic Biotic Medicines

Xavier Duportet, Eligo Bioscience, France
Synthetic Biology of Bacteriophages

Gary K. Lee, Senti Biosciences, USA
Enabling Regulated Gene and Cell Therapies with Engineered Gene Circuits

Virginia W. Cornish, Columbia University, USA
Expanding the Synthetic Capabilities of Yeast

Short Talks Chosen from Abstracts

Next Generation Synthetic Biology

Christopher Voigt, Massachusetts Institute of Technology, USA
Therapeutic Design

Matthew Chang, National University of Singapore, Singapore
Synthetic Genomes

Kole T. Roybal, University of California, San Francisco, USA
Engineering Next-Generation Immune Cell Therapies for Solid Tumors

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

THURSDAY, APRIL 2

Departure