

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## MEETING CHANGE TO VIRTUAL: Emerging Cell Therapies: Realizing the Vision of NextGen Cell Therapeutics (A5)

January 24-28, 2021 • Keystone Resort • Keystone, CO, USA  
Scientific Organizers: Kole T. Roybal, Alex Marson and Yvonne Y. Chen

Scholarship Deadline: October 13, 2020 / Abstract Deadline: October 27, 2020 / Discounted Registration Deadline: November 24, 2020

### MONDAY, JANUARY 25

#### Welcoming Remarks and Keynote Address (8am Denver/Mountain Time Start)

\***Kole T. Roybal**, University of California, San Francisco, USA  
**David Baker**, University of Washington, USA  
*Computational Protein Design for Next-Generation Cellular Therapeutics*

#### The Current State of Cellular Therapies for Cancer: Lessons from the Clinic (8:40am Denver/Mountain Time Start)

\***Kole T. Roybal**, University of California, San Francisco, USA  
\***Yvonne Y. Chen**, University of California, Los Angeles, USA  
**David Edward Gilham**, Celyad, Belgium  
*Next-Generation CART Approaches Exploiting Natural Killer Receptor Targeting*  
**Marcela V. Maus**, Harvard Medical School, USA  
*[NOT AVAILABLE ON DEMAND] New T Cell Therapeutics*  
**Christine E. Brown**, Beckman Research Institute, City of Hope, USA  
*CAR T Cells for the Treatment of Brain Malignancies*  
**Isabelle Riviere**, Memorial Sloan-Kettering Cancer Center, USA  
*Manufacturing Next-Generation Cellular Therapies*  
**Barbra Sasu**, Allogene Therapeutics, USA  
*Allogeneic CAR T Therapy for the Treatment of Cancer*

#### Career Roundtable (12:30pm Denver/Mountain Time Start)

**Darrell J. Irvine**, Massachusetts Institute of Technology, USA  
**Marcela V. Maus**, Harvard Medical School, USA  
**Jane L. Grogan**, Graphite Bio, USA

#### Poster Session 1 (1:30pm Denver/Mountain Time Start)

#### New Approaches for Programming Cellular Therapeutics (3pm Denver/Mountain Time Start)

\***Alex Marson**, University of California, San Francisco, USA  
*Reprogramming Immune Cell Therapeutics with Non-Viral Gene Editing Approaches*  
**Aaron M. Ring**, Yale School of Medicine, USA  
*Engineered Cytokines for Cancer Immunotherapy*  
**Dario Campana**, National University of Singapore, Singapore  
*Expanding the Functional Capacity of Therapeutic Immune Cells*  
\***Ahmad S. Khalil**, Boston University, USA  
*Design of Eukaryotic Gene Regulatory Circuits*  
**Romina Marone**, 275.00  
*Short Talk: Elimination of Mouse B Cells by Non-Virally Engineered CAR19 Knock-In T Cells*  
**Alessio Nahmad**, Tel Aviv University, Israel  
*Short Talk: Engineering B Cells in-vivo Elicits Potent Cellular and Serological Responses in Mice*  
**Aditya Murthy**, 275.00  
*Short Talk: Efficient Gene Knockout in Primary Myeloid Cells by Non-Viral Delivery of CRISPR-Cas9*

**Jonathan B. Gilbert**, 275.00

*Short Talk: Microfluidic Cell Squeezing Enables the Generation of Novel Cell Therapies for Diverse Clinical Applications*

**Owen J. L. Rackham**, 275.00

*Short Talk: Using Data-Driven Approaches to Develop Engineered Cell Therapies*

### TUESDAY, JANUARY 26

#### Next-Generation Cellular Therapeutics for Cancer (8am Denver/Mountain Time Start)

\***Yvonne Y. Chen**, University of California, Los Angeles, USA  
*[NOT AVAILABLE ON DEMAND] Enhancing T-Cell Therapies by Rational Biomolecular Engineering*  
**Martin Pule**, University College London, UK  
*T Cell Therapies with Engineered Control Systems*  
\***Kole T. Roybal**, University of California, San Francisco, USA  
*Control and Customization of Immune Cell Therapies for Cancer*  
**Jane L. Grogan**, Graphite Bio, USA  
*Development of Next-Generation T Cell Therapies*  
**Timothy K. Lu**, Massachusetts Institute of Technology, USA  
*Synthetic Biology Tools to Stimulate Anti-Tumor Immunity*  
**Christopher Bourne**, 150.00  
*Short Talk: Mechanisms of Adoptive T Cell Micropharmacies*  
**Rogelio A. Hernandez-Lopez**, University of California San Francisco, USA  
*Short Talk: T Cell Circuits that Sense Antigen Density with an Ultrasensitive Threshold*

#### Meet the Editors (11:30am Denver/Mountain Time Start)

**Zeljko Durdevic**, EMBO Press, Germany  
**Sara Hamilton**, Cell Press, USA  
**Claudia G. Willmes**, Cell Press, USA

#### Beyond Effector T Cell Therapeutics (3pm Denver/Mountain Time Start)

\***Saar I. Gill**, University of Pennsylvania, USA  
*Engineered Macrophage Therapeutics*  
**Dan S. Kaufman**, University of California, San Diego, USA  
*NK Cell Therapies for Cancer*  
**Tal Danino**, Columbia University, USA  
*Programming Bacteria as a Cancer Therapy*  
\***Megan K. Levings**, University of British Columbia, Canada  
*NextGen Treg Therapies*  
**Tara L. Deans**, University of Utah, USA  
*Synthetic Biology Tools for the Development of Engineered Stem Cell Therapeutics*  
**Tyler Hill**, 150.00  
*Short Talk: Engraftment of Gene-Engineered Human Plasma Cells in Humanized Mice Shows Early Promise for the Feasibility of Novel Plasma Cell-Based Therapies*

### WEDNESDAY, JANUARY 27

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### Engineering Materials for Cellular Therapeutics (8am Denver/Mountain Time Start)

**Matthias Stephan**, Fred Hutchinson Cancer Research Center, USA  
*Synthetic mRNA Nanocarriers for the in situ Programming of Disease-Specific Immune Cells*

\***Darrell J. Irvine**, Massachusetts Institute of Technology, USA  
*Endogenous Immunity Primed by Vaccine-Boosted CAR T Cell Therapy*

\***Tatiana Segura**, Duke University, USA  
*Biomaterials for Tissue Repair and Regulation of Inflammation*

**David J. Mooney**, Harvard University, USA  
*Artificial APCs to Manufacture and Boost T Cell Therapies*

**Andy Tay**, 275.00  
*Short Talk: High-Aspect Ratio Nano-Structures for Efficient, Minimally Perturbative and Transgene-Free Immuno-Transfection*

**Jesus Paez Mayorga**, 150.00  
*Short Talk: Implantable Cell Therapy Platform With In Situ Pre-Vascularization and Localized Immunosuppression for Allogeneic Cell Transplantation*

**Gloria Delfanti**, San Raffaele Scientific Institute, Italy  
*Short Talk: Dual Targeting of Cancer and Suppressive Myeloid Cells by Tumor-Redirected iNKT Cells and Antigen-Carrying Microparticles*

**Sailan Shui**, 150.00  
*Short Talk: Generalizable Computational Approach to Design Chemically Controlled Protein Switches with Multi-Logics for Cell-Based Therapeutics*

### Networking Lounge (1pm Denver/Mountain Time Start)

#### Immune Cell Biology: Implications for Cellular Immunotherapy (3pm Denver/Mountain Time Start)

\***Miriam Merad**, Mount Sinai School of Medicine, USA  
*Myeloid Cell Contribution to Tumor Lesion Composition and Outcome*

\***Andrea Schietinger**, Memorial Sloan Kettering Cancer Center, USA  
*Regulation of T Cell Function in Tumors*

**Joseph C. Sun**, Memorial Sloan Kettering Cancer Center, USA  
*NK Cells in Health and Disease*

**Debattama Sen**, 275.00  
*Short Talk: Disrupting Enhancers within the Core Epigenetic Program of Exhaustion Improves CD8+ T Cell Responses and Enhances Tumor Control*

**Baris Avsaroglu**, University of California, San Francisco, USA  
*Short Talk: Mapping Cellular Interactions between Cancer and Normal Cells via Synthetic Notch Ligand/Receptor Pairs*

**Micah Benson**, 275.00  
*Short Talk: Unbiased Design of Engineered T Cell Therapies Using Functional CRISPR/Cas9 Screens*

**Nayara Leite**, Harvard University, USA  
*Short Talk: Uncovering the Cell-Type Specificity in Human T1D Immune Activation Using iPSC-β Cells*

### Closing Remarks (5:45pm Denver/Mountain Time Start)

**Kole T. Roybal**, University of California, San Francisco, USA

**Yvonne Y. Chen**, University of California, Los Angeles, USA

**Alex Marson**, University of California, San Francisco, USA