**SUNDAY, APRIL 3**
Arrival and Registration

**MONDAY, APRIL 4**
**Welcome and Keynote Session (Joint)***
Paola Arlotta, Harvard University, USA
Programming, Reprogramming and Modeling of the Mammalian Cerebral Cortex

Matthias Lutolf, EPF Lausanne, Switzerland
Engineering Epithelial Organoid Development

Embryoids and Gastruloids for Early Development (Joint)
Jianping Fu, University of Michigan, Ann Arbor, USA
Building Synthetic Human Embryo-Like Structures

Magdalena D. Zernicka-Goetz, Caltech and University of Cambridge, UK
Development of Cell Lineages and Patterning in the Early Mammalian Embryo

Insoo Hyun, Case Western Reserve University, USA
Bioengineering Ethics in Organoids

Short Talks Chosen from Abstracts

**High Content Screening with Organoids (X8)**
Prisca Liberali, Friedrich Miescher Institute for Biomedical Research, Switzerland
Regenerative Landscape of Intestinal Organoids

Athanasia Apostolou, Emulate Inc, USA
Next Generation in vitro Systems for Drug Discovery

Shuibing Chen, Weill Cornell Medical College, USA
A Multiplex Organoid Platform for Pancreatic Cancer Drug Discovery

Short Talks Chosen from Abstracts

**Engineering Principles of Developmental Biology and Regeneration (X7)**
Michael Levin, Tufts University, USA
Pattern Formation and Biological Information Storage During Embryogenesis

Kevin Kit Parker, Harvard University, USA
Building Cardiac Anatomy and Physiology into Muscular Pumps

Christine L. Mummery, Leiden University Medical Center, Netherlands
Biophysical Techniques for Characterization and Functional Analysis of Cardiovascular Cells

Short Talks Chosen from Abstracts

**Poster Session 1**

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**TUESDAY, APRIL 5**
Increasing Complexity in Organoids by Leveraging Development (X8)

Giorgia Quadrato, University of Southern California, USC Stem Cell, USA
Modeling Human Brain Development and Disease at Single Cell Resolution with Brain Organoids

Jason R. Spence, University of Michigan Health System, USA
Complex Cell-Cell Interactions in the Developing Human Lung and Gut

Barbara Treutlein, ETH Zürich, Switzerland
Single Cell Genomics to Guide Human Stem Cell and Tissue Engineering

Madeline Lancaster, Medical Research Council Laboratory of Molecular Biology, UK
Using Brain Organoids to Identify Conserved or Unique Factors in Human Brain Size Evolution

Short Talks Chosen from Abstracts

Microphysiological Systems and Drug Discovery Platforms (X7)

Roger D. Kamm, Massachusetts Institute of Technology, USA
Microphysiological Models for Neurological Disease

Sandra J. Engle, Biogen, USA
In vitro Models to Enable Drug Discovery

Danilo A. Tagle, NCATS, National Institutes of Health, USA
Tissue Chips for Drug Screening

Sylvia F. Boj, Hubrecht Organoid Technology, Netherlands
Patient-Derived Organoids for Drug Development and Screening

Short Talks Chosen from Abstracts

Improvements in Organoid Maturation (X8)

J. Gray Camp, Institute of Molecular and Clinical Ophthalmology, Basel, Switzerland
Interrogating Evolution using Single Cell Genomics and Genome Engineering

James M. Wells, Cincinnati Children's Hospital Research Foundation, USA
Engineering Complexity into PSC-derived Gastrointestinal Organoids

Speaker to be Announced

Short Talks Chosen from Abstracts

Advanced Technologies for Engineering Multi Cellular Living Systems: Computation (X7)
Yoshihiro Morishita, RIKEN, Japan
Quantitative Analysis of Tissue and Cell Dynamics Towards Revealing Design Principles for Organ Morphogenesis

Melissa L. Kemp, Georgia Institute of Technology, USA
Modeling Self-Organization in Multi-Cellular Engineered Living Systems

Elebeoba E. May, University of Houston, USA
Multiscale Models of Spatiotemporal Response to Mycobacterium Infection

Short Talks Chosen from Abstracts

THURSDAY, APRIL 7

Poster Session 2

WEDNESDAY, APRIL 6

Organoids for Disease Modeling (X8)

Meritxell Huch, Max Planck Institute of Molecular Cell Biology and Genetics, Germany
Liver Organoids for Human Biology and Disease

Samira Musah, Duke University, USA
Stem Cell-Derived Organ Chips for Disease Modeling

Mina Gouti, Max-Delbrück Center for Molecular Medicine, Germany
Neuromuscular Organoids to Model Human Development and Disease

Anna Greka, Harvard Medical School, USA
Modeling Genetic Diseases in Human Kidney Organoids

Short Talks Chosen from Abstracts

Advanced Technologies for Engineering Multi-Cellular Living Systems: Imaging, Biomaterials, and 3D Printing (X7)

Rashid Bashir, University of Illinois, USA
3D Printed Cellular Machines for Engineering and Biology

Adam W. Feinberg, Carnegie Mellon University, USA
3D Bioprinting of Collagen to Rebuild Components of the Human Heart

Anjelica L. Gonzalez, Yale University, USA
Development of Biomaterials for Use As Investigational Tools

Claire G. Jeong, Bristol Myers Squibb, USA
Talk Title to be Announced

Short Talks Chosen from Abstracts

Bioengineering of Organoids (Joint)

Nuria Montserrat Pulido, Institute for Bioengineering of Catalonia, Spain
Engineering Solutions for Pluripotent Stem Cell Derived Kidney Organoids

Jennifer A. Lewis, Harvard University, SEAS, USA
Biomanufacturing of Vascularized Organoids and Organ-Specific Human Tissues

Melissa Little, Murdoch Children’s Research Institute, Australia
Engineering Kidney Tissue for Transplantation

Short Talks Chosen from Abstracts

* Session Chair † Invited but not yet accepted  Program current as of December 22, 2021. Meal formats are based on meeting venue. For the most up-to-date details, visit https://www.keystonesymposia.org.
Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(X8)
Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(X7)

KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Organoids as Tools for Fundamental Discovery and Translation (X8)
Scientific Organizers: Jason R. Spence, Melissa Little and Barbara Treutlein
Sponsored by Genmab A/S

Engineering Multi-Cellular Living Systems (X7)
Scientific Organizers: Roger D. Kamm, Nuria Montserrat Pulido and Jianping Fu
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Global Health Travel Award Deadline: March 14, 2022 / Scholarship Deadline: January 6, 2022 / Abstract Deadline: January 6, 2022 / Discounted Registration Deadline: February 3, 2022

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