

*This is a preliminary agenda and is subject to change

Preliminary Agenda
2021 NHLBI Systems Biology Symposium
May 12 – 13, 2021

Wednesday, May 12, 2021

9:00-9:10am **Welcome and Opening Remarks** (5 mins)
Keji Zhao, Ph.D. **Michael M. Gottesman, Ph.D.**
Organizing Committee Chair *Deputy Director of Intramural Research*
National Heart, Lung and Blood Institute, NIH *Office of Intramural Research, NIH*

Session 1 Omics Moderator: Susan Harbison, Ph.D.

**Speaker Presentations slots are 25 minutes + 5 minutes Q&A + 5 minutes transition time*

9:10-9:40am **Nuclear Condensates in Gene Regulation and Disease** (30 mins)
Richard Young, Ph.D.
Whitehead Institute, Massachusetts Institute of Technology

9:45-10:15am **Epigenetic Basis of Single-Cell Heterogeneity** (30 mins)
Keji Zhao, Ph.D.
National Heart, Lung, and Blood Institute, NIH

10:15-10:45am Morning Break (30 mins)

10:45-11:15am **Integrative Approaches Probing Disrupted Cellular Homeostasis in Metabolic Diseases** (30 mins)
Anna Greka, M.D., Ph.D.
Harvard Medical School, Brigham & Women's Hospital, Broad Institute of MIT

11:20-11:50am **Presentation Title Forthcoming** (30 mins)
Xiaoliang Sunney Xie, Ph.D.
Peking University

11:50am-12:20pm **Pre-Recorded Poster Presentations Segment #1** – (15 posters/30 mins)

12:20-1:15pm* Lunch Break (55 min)

*12:20-12:45pm **Poster Presenters Break-Out Rooms** (30 mins)

Session 2 Systems Imaging Moderator: Mark Knepper, M.D., Ph.D.

**Speaker Presentations slots are 25 minutes + 5 minutes Q&A + 5 minutes transition time*

1:15-1:45pm **3D Imaging of Cells by FIBSEM with Correlation to Cryo Fluorescence Microscopy** (30 mins)
Harald Hess, Ph.D.
Howard Hughes Medical Institute, Janelia Research Campus

1:50-2:20pm **Subcellular Connectomic Analyses of the Energy Distribution System in Striated Muscle** (30 mins)
Brian Glancy, Ph.D.
National Heart, Lung, and Blood Institute, NIH

2:20-2:50pm **Pre-Recorded Poster Presentations Segment #2** – (12 posters/24 mins)

2:50-3:20pm* Afternoon Break (30 mins)

*This is a preliminary agenda and is subject to change

- *2:50-3:20pm **Poster Presenters Breakout Rooms** (30 mins)
- 3:20-3:50pm **Tools for Analyzing and Controlling Biological Systems** (30 mins)
Edward Boyden, Ph.D.
Massachusetts Institute of Technology and Howard Hughes Medical Institute
- 3:55-4:25pm **Metabolic Design of the Metabolic Extreme, the Shrew** (30 mins)
Robert Balaban, Ph.D.
National Heart, Lung, and Blood Institute, NIH
- 4:30-5:00pm **Spatial Genomics: *in situ* Transcriptome Profiling by RNA seqFISH+** (30 mins)
Long Cai, Ph.D.
California Institute of Technology
- 5:00-5:05pm **Closing Remarks** (5 mins)
Mark Knepper, M.D., Ph.D.
National Heart, Lung, and Blood Institute, NIH
- 5:05pm **Adjourn Day 1**

Thursday, May 13, 2021

- 9:00-9:05am **Opening Remarks** (5 mins)
Keji Zhao, Ph.D.
National Heart, Lung, and Blood Institute, NIH

Session 3 **Systems Physiology: Metabolomics and Sleep** *Moderator: Hong Xu, Ph.D.*

**Speaker Presentations slots are 25 minutes + 5 minutes Q&A + 5 minutes transition time*

- 9:10-9:40am **Identifying Metabolites That Alter Physiology** (30 mins)
Gary Siuzdak, Ph.D.
The Scripps Research Institute
- 9:45-10:15am **Multi-Omic Approach to Understanding Regulation of Aquaporin-2 in Kidney** (30 mins)
Mark Knepper, M.D., Ph.D.
National Heart, Lung, and Blood Institute, NIH
- 10:15-10:45am Morning Break (30 mins)
- 10:45-11:15am **Obstructive Sleep Apnea and Cardiometabolic Disease: Dissecting Causal, Pleiotropic and Mediating Pathways** (30 mins)
Susan Redline, M.D., M.P.H.
Harvard Medical School, Brigham and Women's Hospital
- 11:20-11:50am **Perturbing Genetic Networks That Influence Sleep Duration in *Drosophila Melanogaster*** (30 mins)
Susan Harbison, Ph.D.
National Heart, Lung, and Blood Institute, NIH
- 11:50am-12:20pm **Pre-Recorded Poster Presentations Segment #3** – (14 posters/28 mins)
- 12:20-1:20pm* Lunch Break (1 hr)

*This is a preliminary agenda and is subject to change

*12:20-12:50pm **Poster Presenters Break-Out Rooms** (30 mins)

Session 4 **Systems Biology in Genetics and Development** *Moderator: Brian Glancy, Ph.D.*

**Speaker Presentations slots are 25 minutes + 5 minutes Q&A + 5 minutes transition time*

- 1:20-1:50pm **CRISPR Mediated Homologous Recombination and the Discovery of Rare Human Diseases** (30 mins)
Hugo Bellen, DVM, Ph.D.
Baylor College of Medicine and Neurological Research Institute
- 1:55-2:25pm **scRNAseq Developmental Trajectories to Investigate Differentiation** (30 mins)
Jeffrey Farrell, Ph.D.
National Institute of Child Health and Human Development, NIH
- 2:25-2:40pm Afternoon Break (15 mins)
- 2:40-3:10pm **Single-cell Transcriptomics of the Mouse Kidney Reveals Potential Cellular Targets of Kidney Disease** (30 mins)
Katalin Susztak, M.D., Ph.D.
University of Pennsylvania Perelman School of Medicine
- 3:15-3:45pm **A Darwin Selection Within Developing Germ Cells** (30 mins)
Hong Xu, Ph.D.
National Heart, Lung, and Blood Institute, NIH
- 3:50-4:20pm **A Systems-wide Approach to Understanding Interorgan Communication in *Drosophila*** (30 mins)
Norbert Perrimon, Ph.D.
Harvard Medical School/Howard Hughes Medical Institute
- 4:25-4:30pm **Closing Remarks** (5 mins)
Robert Balaban, Ph.D.
Scientific Director, Division of Intramural Research
National Heart, Lung, and Blood Institute, NIH
- 4:30pm **Adjourn Day 2**