

Day 1 - SATURDAY May 6, 2017

The Fourth International Workshop on Mammalian Synthetic Biology

7:45 – 8:30am Registration & Breakfast [Questrom Lobby]

8:15 – 8:30am Welcome & Introduction (Ron & Mo)

8:30 – 9:15am Opening Plenary: **PAULA HAMMOND**
“Highly Controlled DNA and RNA Release Surfaces for Systemic and Localized Delivery”

9:15 – 10:30am **Session 1: Therapeutic Delivery Systems**
Moderator: **Leonidas Bleris**

Speakers:

Daniel Anderson: “Nucleic Acid Delivery Systems for RNA Therapy and Gene Editing”

Junghae Suh: “Synthetic Virology: Reprogramming Virus Capsids for Biomedicine”

Poster talk:

Taylor Dolberg: “Engineering Red Blood Cell-Based Biosensors for Physiological Monitoring”

10:30 – 11:00am Coffee Break [Questrom Lobby]

11:00 – 12:30pm **Session 2: Genome Engineering & Epigenome Biology**
Moderator: **Tara Deans**

Speakers:

Rudolph Jaenisch: “Stem Cells, Epigenetic Regulation and Gene Editing”

Lacramioara Bintu: “Single-cell Dynamics of Chromatin-mediated Gene Regulation”

Poster talk:

Alex Ng: “Programming Cell Fate Using the Human TFome”

Nika Shakiba: “Competition During Reprogramming Gives Rise to Deterministically Elite Clones”

12:30 - 1:45pm Lunch [across the street in the Lobby of CILSE]

1:45 – 3:30pm **Session 3: Developmental & Regenerative Biology**
Moderator: **Leonardo Morsut**

Speakers:

Amy Wagers: “Strategies to Enhance the Regenerative Functions of Stem Cells”

Michael Levin: “Re-wiring Endogenous Bioelectric Networks: A complement to Genome Editing for Synthetic Morphology”

Markus Affolter: “Novel Protein Binder-based Tools for Functional Studies in Developing Organisms”

Poster talk:

Hyun-Ho Greco Song: “Engineering of Vascularized and Perfusable 3D Organ-on-a-chip Platform for Supporting Tissue-Specific Functions in vitro”

3:30 – 4:00pm Coffee Break [Questrom Lobby]

4:00 – 5:45pm **Session 4: Systems & Genetic Circuits**
Moderator: **Karen Polizzi**

Speakers:

Ron Weiss: “Mammalian Synthetic Biology Circuits for Cancer Therapy and Programmable Organoids”

Hana El-Samad: “Biological Feedback Control”

Jeff Hasty: “Engineered Gene Circuits: From Clocks to Synchronized Delivery”

Poster talk:

Minhee Park: “Synthetic Chromatin Regulators and Circuits in Mammalian Cells”

6:00 – 8:30pm Poster Session & Reception [CILSE Lobby]

Day 2 - SUNDAY May 7, 2017

The Fourth International Workshop on Mammalian Synthetic Biology

8:00 – 8:30am Breakfast [Questrom Lobby]

8:30 – 9:15am Closing Plenary: **GEORGE CHURCH**
“Radical writing of Genomes & Epigenomes & In Situ Readouts”

9:15 – 10:45am **Session 5: Emerging Technologies**
Moderator: **Mo Khalil**

Speakers:

Domitilla Del Vecchio: “A Blueprint for a Synthetic Genetic Feedback Controller to Reprogram Cell Fate”

Mikhail Shapiro: “Biomolecular Engineering for Noninvasive Imaging and Control of Cellular Function”

Kevin Esvelt: “Daisy drive systems to precisely immunize disease reservoirs and control invasive mammals”

10:45 – 11:00am Coffee Break [Questrom Lobby]

11:00 – 12:30pm **Session 6: Regulatory: Synthetic Biology’s Path to the Clinic & Beyond**
(Organized in collaboration with the MIT Center for Biomedical Innovation)
Moderator: **Ken Oye**

Speakers:

Ken Oye, Professor of Political Science and Data, Systems and Society, MIT

Anne-Virginie Eggimann, Vice President, Regulatory Science, bluebird bio, Inc.

Larisa Rudenko, Visiting Scholar, at the Program on Emerging Technologies, MIT (on leave from Senior Advisor for Biotechnology, FDA Center for Veterinary Medicine)

Samantha Maragh, Leader, Genome Editing Program, NIST

Andrew Byrnes, Chief of Gene Transfer & Immunogenicity Branch in the Division of Cellular & Gene Therapies, Office of Tissues & Advanced Therapies, FDA

12:30pm Closing Remarks & Boxed Lunch to go