BOSTON MAMMALIAN SYNTHETIC BIOLOGY

MIT
Wed, Aug 17, 2022

TIME	SESSION
1:00 - 4:00 pm	**Session 1:** Gene regulation: Parts to systems
4:00 - 4:30 pm	**Poster session with coffee break**
4:30 - 5:50 pm	**Session 2:** Programming and reprogramming cell fate
6:00 - 7:30 pm	**Session 3:** Mapping to tracking cell fates

AGENDA

Session 1: Gene regulation: Parts to systems

1:00 - 4:00 pm

Engineering mammalian cell desiccation tolerance using tardigrade intrinsically disordered proteins — Samuel Lim, Silver Lab
The gene sensor: A platform for sensing and responding to gene expression in the endogenous locus — Fabio Caliendo, Weiss Lab
What makes a "good" recombinase? Finding the parameters determining recombination efficiency in large serine integrases — George Chao, Church Lab
Supercoiling-mediated feedback rapidly couples and tunes transcription — Christopher Johnstone, Galloway Lab
A post-transcriptional mammalian toggle switch that resists epigenetic silencing — Noreen Wauford, Weiss Lab
Programmable eukaryotic protein expression with RNA sensors — Kaiyi Jiang, AbuGoot Lab
RNA structure prediction with deep learning — Yu Li, Collins Lab
Accelerating the manufacture of SARS-CoV-2 virus-like particle vaccines — Andrew Kane, Weiss Lab

Poster session with coffee break

4:00 - 4:30 pm

Session 2: Programming and reprogramming cell fate

4:30 - 5:50 pm

Programmable symmetry breaking and multicellular structure formation — Akshay M. Patel, Weiss Lab
Uncovering the Oct4 expression trajectory of successful reprogramming in human fibroblasts — Katherine Ilia, Collins + Del Vecchio Labs
A streamlined protocol for highly-efficient reprogramming to induced motor neurons — Nathan Wang, Galloway Lab
Synthetic genetic networks for multi-step differentiation of human iPSCs into programmable liver organoids — Deepak Mishra, Weiss Lab

Session 3: Mapping to tracking cell fates

6:00 - 7:30 pm

Exploring the role of PI3K signaling dynamics in breast cancer progression — Keith Gagnon, Khalil + Chen Labs
Spatially precise multimodal characterization of intact biological system — Anubhav Sinha, Boyden + Regev Labs
Automated cell-state transition using endoribonuclease mediated microRNA-based cell-state sensors — Lei Wang, Weiss Lab
Sensing and modulating neurodegenerative protein aggregation with a synthetic protein circuit — Giulio Chiesa, Khalil Lab

Social + food in Stata Amphitheater