

Tools for assembling the cell:

Towards the era of cell structural bioinformatics

Date: Jan 3rd, 2024

Time: 1:30 - 4:30 pm (HST)

Place: Plaza Ballroom at Fairmont Orchid

1:30pm - 1:40pm: Welcome and Introductions (Drs. Emma Lundberg and Trey Ideker)

1:40pm - 2:05pm: *Towards whole-cell models of cellular behavior*

Markus Covert, PhD – Professor, Bioengineering; Professor, Chemical and Systems Biology, Stanford University

2:05pm - 2:30pm: *OpenOrganelle: Bringing the structures of life into the open with FIB-SEM and automated segmentation*

Jeff Rhoades, PhD – Machine Learning Operations Engineer for CellMap Team, Howard Hughes Medical Institute

2:30pm - 2:50pm: pre-recorded video: *Towards 4D modeling of the cell powered by quantitative imaging data.*

Jan Ellenberg, PhD - Head of Cell Biology and Biophysics; Head of the European Molecular Biology Laboratory Imaging Center

2:50pm - 3:10pm: Break

3:10pm - 3:40pm: *Genome-Wide Assessment of Clustering of Missense Variants in Neurodevelopmental Disorders Versus Cancer*

Rachel Karchin, PhD – Professor, Biomedical Engineering; Professor, Oncology; Professor, Computer Science, Johns Hopkins University

Tychele Turner, PhD – Assistant Professor, Genetics, Washington University in St. Louis

3:40pm - 4:05pm: *Machine Learning for Precision Medicine*

Marinka Zitnik, PhD – Assistant Professor, Biomedical Informatics, Associate Faculty, Kempner Institute for the Study of Natural and Artificial Intelligence; Associate Member at Broad Institute of MIT

and Harvard; Faculty at Harvard Data Science, Harvard Medical School

4:05pm - 4:25pm: pre-recorded video: *Protein design for deep learning*

David Baker, PhD – Director, Institute for Protein Design; Investigator, Howard Hughes Medical Institute; Henrietta and Aubrey Davis Endowed Professor of Biochemistry; Adjunct Professor, Genome Sciences, Bioengineering, Chemical Engineering, Computer Science, and Physics, University of Washington

4:25pm - 4:30pm: Closing Remarks (Drs. Emma Lundberg and Trey Ideker)

Organizers:

Emma Lundberg

Trey Ideker

Andrej Sali

Organizer assistants:

Clara (Mengzhou) Hu

Andrew Latham

Xikun Zhang