



Lake Conference

MODELING LIFE FROM CELLS TO TISSUES

Agenda

April 20 – 22, 2026

Monday, April 20

| Time | Activity | Location |
|-----------------|--|----------------|
| 8:00am – 9:00am | Registration and Breakfast | Lobby & Atrium |
| | Speaker Testing | Auditorium |
| 9:00am – 9:05am | Welcome: Rui Costa , Allen Institute | Auditorium |
| 9:05am – 9:15am | Opening Remarks: Co-Organizers Edouard Hannezo , Institute of Science and Technology Austria James Sharpe , EMBL Barcelona Prisca Liberali , Friedrich Miescher Institute for Biomedical Research Ru Gunawardane , Allen Institute | |

SESSION 1 CELL REPRESENTATIONS | Co-Chairs: Prisca Liberali, Yanlan Mao

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| 9:15am – 9:40am | James Briscoe , The Francis Crick Institute <i>The dynamics of neural tube development</i> | Atrium |
| 9:40am – 10:05am | Paul François , Université de Montréal <i>Decoding high-dimensional immune information into a low-dimensional T cell activation manifold</i> | |
| 10:05am – 10:30am | Alan Lowe , Chan Zuckerberg Biohub <i>Talk TBA</i> | |
| 10:30am – 11:00am | Coffee and Discussion | Atrium |
| 11:00am – 11:10am | Eran Agmon , University of Connecticut Health <i>Compositional Systems Biology with Vivarium</i> | Auditorium |

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| 11:10am – 11:20am | Aya Aqeel , University of Minnesota <i>From Masks to Graphs: A Framework for Quantitative Morphology Without Segmentation</i> | |
| 11:20am – 11:45am | Allon Klein , Harvard University <i>The problem(s) with cellular representation learning</i> | |
| 11:45am – 12:10pm | Jun Allard , University of California, Irvine <i>Hypothesis-tuned model flexibility to decipher and design cell signaling pathways</i> | |
| 12:10pm – 1:45 pm 12:10 – 13:45 | Lunch and Discussion | Atrium |
| 1:45pm – 2:10pm 13:45 – 14:10 | Mukund Thattai , National Centre for Biological Sciences <i>Affordance theory and the evolution of eukaryotic intracellular compartments</i> | |
| 2:10pm – 2:35pm 14:10 – 14:35 | Dana Pe'er , Sloan Kettering Institute, MSKCC <i>Talk TBA</i> | |
| 2:35pm – 2:45pm 14:35 – 14:45 | Bianca Dumitrascu , Columbia University <i>Limits of Mechanistic Neural Networks for Inverse Morphogenesis</i> | Auditorium |
| 2:45pm – 2:55pm 14:45 – 14:55 | Leigh Harris , Allen Institute <i>Adherent hiPSC lumenoids: A robust 3D platform for bridging cellular dynamics, multicellular organization, and biophysical modeling</i> | |
| 2:55pm – 3:40pm 14:55 – 15:40 | Snacks and Discussion | Atrium |
| 3:40pm – 4:05pm 15:40 – 16:05 | Ewa Paluch , University of Cambridge <i>Morphogenesis across scales: from cell shape to tissue organization</i> | Auditorium |

SESSION 2 **SELF-ORGANIZATION | Co-Chairs: Ru Gunawardane, Sara Wickström**

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| 4:05pm – 4:30pm 16:05 – 16:30 | Rashmi Priya , The Francis Crick Institute <i>The Mechanics of Building Functional Organs</i> | |
| 4:30pm – 5:30pm 16:30 – 17:30 | Poster Session 1 (posters #1-14) | Atrium, L2 |
| 5:30pm – 6:30pm 17:30 – 18:30 | Dinner | Atrium |

Tuesday, April 21

| Time | Activity | Location |
|-----------------|---------------------------------------|------------|
| 8:00am – 9:00am | Breakfast | Atrium |
| | Speaker Testing | Auditorium |
| 9:00am – 9:15am | Opening Remarks: Co-Organizers | Auditorium |

SESSION 2 SELF-ORGANIZATION | Co-Chairs: Ru Gunawardane, Sara Wickström

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| 9:15am – 9:40am | Alex Schier , Universität Basel <i>Global views of development</i> | Auditorium |
| 9:40am – 10:05am | Karin Alim , Technical University of Munich <i>Learning matters!</i> | |
| 10:05am – 10:30am | Miguel Concha , Universidad de Chile <i>Tension-driven transitions in annual killifish development</i> | |
| 10:30am – 11:00am | Coffee and Discussion | Atrium |
| 11:00am – 11:10am | Wenzheng Shi , New York University <i>Ordering from the edge: Chiral multicellular pattern formation directed by actin self-organization in cells</i> | Auditorium |
| 11:10am – 11:20am | Tony Tsai , Washington University <i>Neural progenitors exploit a transient positional information optimum for precise patterning during morphogenesis</i> | |
| 11:20am – 11:45am | Nicoletta Petridou , European Molecular Biology Laboratory <i>Timing, noise and collectives: how cell cycles shape the early embryo</i> | |
| 11:45am – 12:10pm | Takashi Hiragi , Hubrecht Institute <i>Embryo size control</i> | |
| 12:10pm – 1:45pm 12:10 – 13:45 | Lunch and Discussion | Atrium |
| 1:45pm – 2:10pm 13:45 – 14:10 | Amy Shyer , The Rockefeller University <i>Organic self-organization: Tissue symmetry breaking through cross-scale coupling of cell and supracellular structures</i> | Auditorium |

SESSION 3 ENGINEERING | Co-Chairs: James Sharpe, Nicoletta Petridou

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| 2:10pm – 2:35pm 14:10 – 14:35 | Matthias Lutolf , Roche Institute of Human Biology and EPFL <i>Engineering organoids</i> | |
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2:35pm – 3:00pm
14:35 – 15:00

Sebastian Streichan, University of California, Santa Barbara
Physics of living systems: From embryos to structured active matter

CRUISE / DINNER Argosy Cruise | Lake Washington

3:00pm – 3:30pm
15:00 – 15:30

Transit and Load Cruise Boat

AGC Marina

3:30pm – 6:30pm
15:30 – 18:30

Argosy Cruise

6:30pm – 7:00pm
18:30 – 19:00

Return to Institute

Allen Institute

Wednesday, April 22

| Time | Activity | Location |
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| 8:00am – 9:00am | Breakfast | Atrium |
| | Speaker Testing | Auditorium |
| 9:00am – 9:15am | Opening Remarks: Co-Organizers | Auditorium |

SESSION 3 ENGINEERING | Co-Chairs: James Sharpe, Nicoletta Petridou

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| 9:15am – 9:40am | Giovanni D'Angelo , EPFL Switzerland <i>The lipid architecture of the mammalian brain</i> | Atrium |
| 9:40am – 10:05am | Michael Elowitz , California Institute of Technology <i>Engineering protein circuits for cancer therapy</i> | |
| 10:05am – 10:30am | Miki Ebisuya , Physics of Life TU Dresden <i>Cross-species comparison and manipulation of organoid tissue mechanics</i> | |
| 10:30am – 11:00am | Coffee and Discussion | Atrium |
| 11:00am – 11:10am | Adrian Jacobo , Biohub <i>Title TBD</i> | Auditorium |
| 11:10am – 11:20am | Wenhui Tang , Harvard Medical School <i>Title TBD</i> | |

SESSION 4 ROBUSTNESS | Co-Chairs: Edouard Hannezo, Rashmi Priya

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| 11:20am – 11:45am | Christina Theodoris , Gladstone Institutes; University of California, San Francisco <i>Temporal AI models for programming cell state trajectories</i> | |
| 11:45am – 12:10pm | Yanlan Mao , University College London <i>How to build robust architecture: buffering mechanical noise during development and homeostasis</i> | |
| 12:10pm – 1:45pm 12:10 – 13:45 | Lunch and Discussion | Atrium |
| 1:45pm – 2:10pm 13:45 – 14:10 | L. Mahadevan , Harvard University <i>Some physical aspects of morphogenesis</i> | Auditorium |
| 2:10pm – 2:35pm 14:10 – 14:35 | Jesse Veenvliet , MPI Molecular Cell Biology and Genetics <i>Talk TBA</i> | |
| 2:35pm – 3:00pm 14:35 – 15:00 | Arthur Lander , University of California, Irvine <i>How do biological systems counter “exponential” threats?</i> | |

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| 3:00pm – 3:45pm 15:00 – 15:45 | Snacks and Discussion | Atrium |
| 3:45pm – 3:55pm 15:45 – 15:55 | Kevin Cheung , Fred Hutchinson Cancer Center <i>Title TBD</i> | Auditorium |
| 3:55pm – 4:05pm 15:55 – 16:05 | Laura Capolupo , DBSSE-ETH <i>Title TBD</i> | |
| 4:05pm – 4:30pm 16:05 – 16:30 | Sara Wickström , MPI Molecular Biomedicine <i>Mechanical regulation of cell states</i> | |
| 4:30pm – 4:55pm 16:30 – 16:55 | TBD | |
| 4:55pm – 5:00pm 16:55 – 17:00 | Wrap-up | |
| 5:00pm – 6:00pm 17:00 – 18:00 | Poster Session 1 (posters #15-29) | Atrium, L2 |
| 6:00pm – 7:00pm 18:00 – 19:00 | Dinner | Atrium |