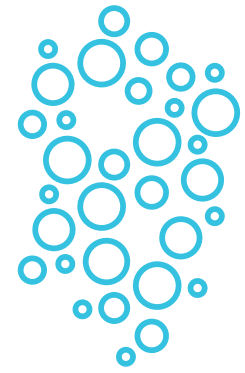


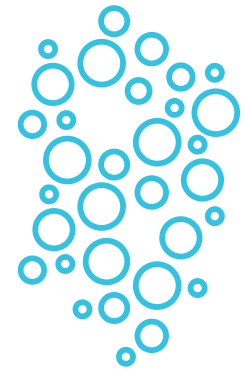
EXPLORING FRONTIERS



Predicting Biology: *Leveraging computation and mathematics to accelerate biological discovery*

Thursday, July 25, 2019	
8:30-9:00am	Breakfast - Allen Institute Atrium
9:00-9:10am	Kathy Richmond, The Paul G. Allen Frontiers Group and Markus Covert, Allen Discovery Center at Stanford University <i>Welcome and opening remarks</i>
9:10-9:30am	Julie Theriot, University of Washington & Allen Institute for Cell Science <i>Emergence of cell shape and movement from molecular-scale dynamics</i>
9:30-9:50am	Mark Brynildsen, Princeton University <i>Toward next-generation antibiotics: Systems-level dissection of bacterial responses to phagosomal stressors</i>
9:50-10:10am	Neda Bagheri, Northwestern University, University of Washington & Allen Institute for Cell Science <i>Predicting how environmental context impacts cell populations</i>
10:10-10:30am	Peter Sorger, Harvard Medical School <i>Measuring and modeling variability in drug response in cells, tissues and clinical trials</i>
10:30-10:50am	Break
10:50-11:10am	Mary Dunlop, Boston University <i>Dynamics, feedback, and transient antibiotic resistance in single cells</i>
11:10-11:30am	Markus Covert, Allen Discovery Center at Stanford University <i>A multi-scale, integrated approach to understanding infection</i>
11:30-11:50am	Zaida Luthey-Schulten, University of Illinois at Urbana-Champaign <i>Hybrid simulations of minimal bacterial and eukaryal cells</i>
11:50am-12:35pm	Panel Discussion, led by Andrew McCulloch, University of California, San Diego <i>Frontiers of modeling in cellular biology</i>
12:35-1:55pm	Lunch - Atrium & 2nd Floor

EXPLORING FRONTIERS



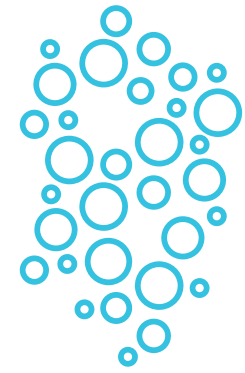
Predicting Biology: *Leveraging computation and mathematics to accelerate biological discovery*

Thursday, July 25, 2019 (cont'd)	
1:55-2:15pm	Peter Robinson, University of Sydney <i>The physical brain</i>
2:15-2:35pm	Gaute Einevoll, Norwegian University of Life Sciences <i>Evaluating the merit of candidate brain models with brain simulations</i>
2:35-2:55pm	Adrienne Fairhall, University of Washington <i>The role of theory and modeling in neuroscience</i>
2:55-3:15pm	Anton Arkhipov, Allen Institute for Brain Science <i>Data-driven modeling of the cortex based on a systematic experimental platform</i>
3:15-3:35pm	Break
3:35-3:55pm	Michael Reimann, École Polytechnique Fédérale de Lausanne <i>A null model of the mouse whole-neocortex micro-connectome</i>
3:55-4:15pm	Hiroki Ueda, RIKEN Center <i>Systems biology of mammalian sleep/wake cycles: Phosphorylation hypothesis of sleep</i>
4:15-5:00pm	Panel Discussion, led by Christof Koch, Allen Institute for Brain Science <i>Frontiers of modeling in neuroscience</i>

ABOUT THE PAUL G. ALLEN FRONTIERS GROUP

The Paul G. Allen Frontiers Group takes our Founder's enduring quest to understand the mysteries of bioscience to a global scale—beyond the science happening within the labs of the Allen Institute—by directing funding to researchers conducting cutting-edge science around the world. Our team is in continuous dialogue with scientists and visionaries in all areas of bioscience, constantly seeking the novel ideas and emerging fields where an early investment could have the power to make a difference for humankind.

EXPLORING FRONTIERS



Predicting Biology: *Leveraging computation and mathematics to accelerate biological discovery*

Friday, July 26, 2019	
8:30-9:00am	Breakfast - Allen Institute Atrium
9:00-9:05am	<i>Welcome and opening remarks</i>
9:05-9:25am	Harlan Robins, Adaptive Biotechnologies <i>Learning to read the cellular adaptive immune repertoire</i>
9:25-9:45am	Grégoire Altan-Bonnet, National Cancer Institute <i>Mapping how small differences of tumor antigenicity translate into divergent functional outcomes for T cell activation</i>
9:45-10:05am	Bree Aldridge, Tufts University <i>The long and the short of it: paths to engineering TB treatment</i>
10:05-10:25am	Martin Meier-Schellersheim, National Institute of Allergy and Infectious Diseases <i>Modeling how molecular interactions shape cellular signaling processes</i>
10:25-10:45am	Break
10:45-11:05am	Shai Shen-Orr, Technion - Israel Institute of Technology <i>Connect the dots - An integrative cell centered view of immunity</i>
11:05-11:25am	Kathryn Miller-Jensen, Yale University <i>Exploring a role for cell-to-cell variability in macrophage functional plasticity</i>
11:25am-12:10pm	Panel Discussion, led by Hamid Bolouri, Allen Institute for Immunology <i>Frontiers of modeling in immunology</i>
12:10-12:15pm	<i>Closing remarks</i>

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