



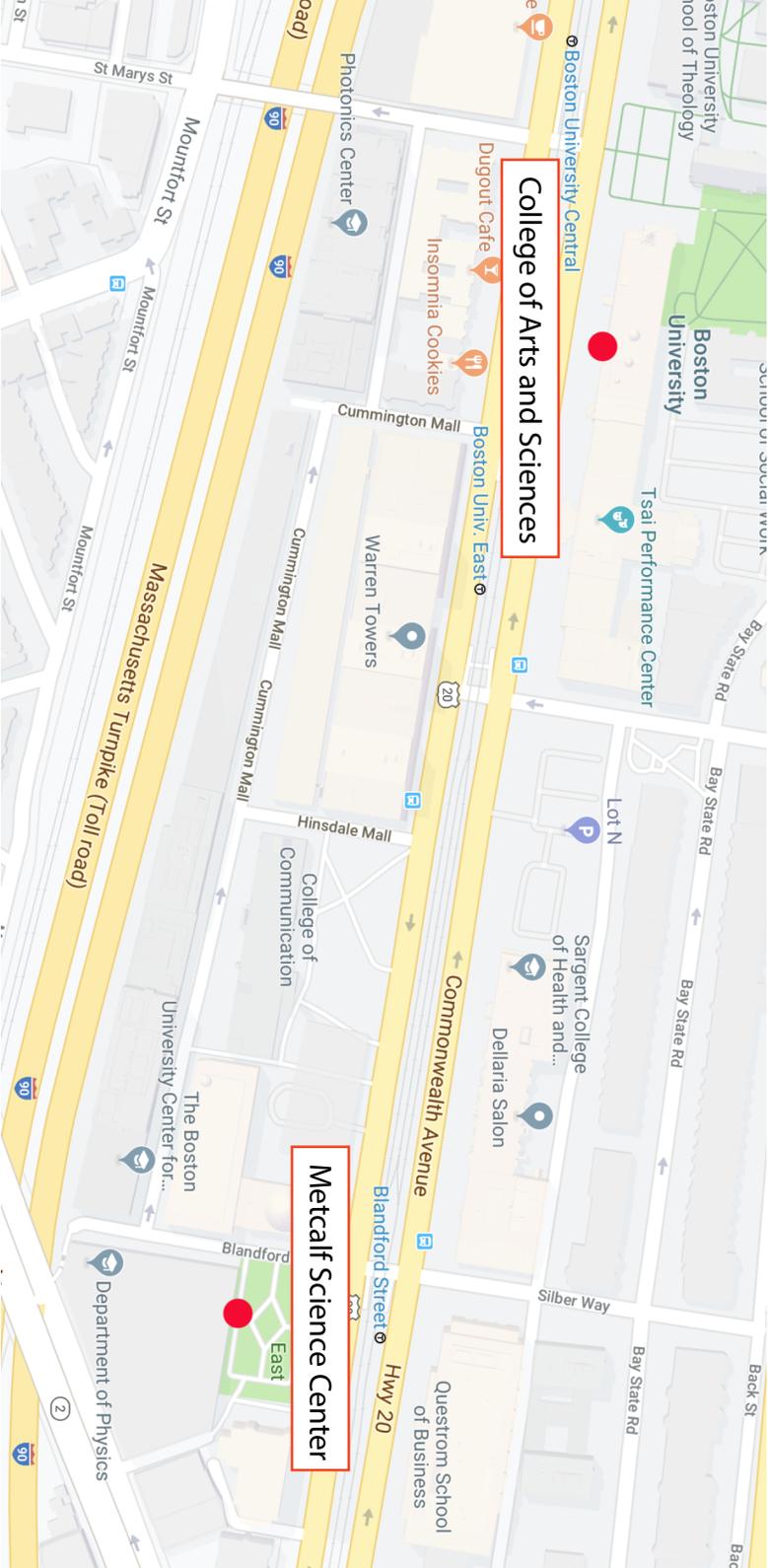
Theory in Living Systems 2019 Dynamics and Organization in Space

May 30-31, 2019
Boston University



Made possible by generous funding from the
Simons Foundation MMLS Program

Map of Campus



Friday, May 31

Thursday, May 30

8:00 - 8:45 AM Registration
College of Arts and Sciences Lobby

8:45 - 12:00 PM Session 1
College of Arts and Sciences Rm 224
Chair: Alex Golden - Boston University

Learning to navigate in dynamic environments
Antonio Celani - International Center of Theoretical Physics, Trieste

Fixation probabilities in compressible turbulence
Abigail Plummer, Harvard University, Department of Physics

Coffee Break

Emergent phenomena in biological flow systems
Eleni Katifori, University of Pennsylvania, Department of Physics

12:00 - 2:00 PM Lunch and Posters
Metcalf Science Center Lounge

2:00 - 5:30 PM Session 2
Metcalf Science Center Rm 113 Chair: Kirill Korolev - Boston University

Structural unity and functional diversity in eukaryotic flagella
Eva Kanso, University of Southern California, Mechanical and Aerospace Engineering

Physical limits to the perception of mechanical properties
Farzan Beroz, University of Michigan, Department of Physics

Coffee Break

Leader cells in collective chemotaxis: optimality and tradeoffs
Brian Camley, Johns Hopkins University, Department of Physics and Astronomy

Revisiting the structure-function relationship with persistent homology
Andrea Liu, University of Pennsylvania, Department of Physics

8:00 - 8:45 AM Registration
Metcalf Science Center Lounge

8:45 - 12:00 PM Session 3
Metcalf Science Center Rm 113
Chair: Robert Marsland - Boston University

Self-organized principles of morphogenesis
Edouard Hannezo, IST Austria, Life Sciences

Topological turbulence in the membrane of a living cell
Jinghui Liu, MIT, Department of Physics

Coffee Break

Why Bother Trying to Understand Life?: Some Reflections on the Purpose(s) of Knowledge
Ryan Shea, Providence College, Department of Philosophy

12:00 - 1:00 PM Lunch
Metcalf Science Center Lounge

1:00 - 5:30 PM Session 4
Metcalf Science Center Rm 113
Chair: Pankaj Mehta - Boston University

Emergence of collective oscillations in adaptive cells
Shou-Wen Wang, Harvard Medical School

Tissues as active systems
Jacques Prost, Institut Curie, Physico-Chimie Lab

Biology across scales: From modeling cerebellar shape to the correlated motion of chromatin
Jennifer Schwarz, Syracuse University, Department of Physics

Coffee Break

Symmetry breaking during morphogenesis of a mechanosensory organ
Anna Erzberger, Rockefeller University

Waves and flows during Drosophila early morphogenesis
Massimo Vergassola, University of California San Diego, Physics

5:30 - 5:45 PM Concluding Remarks