

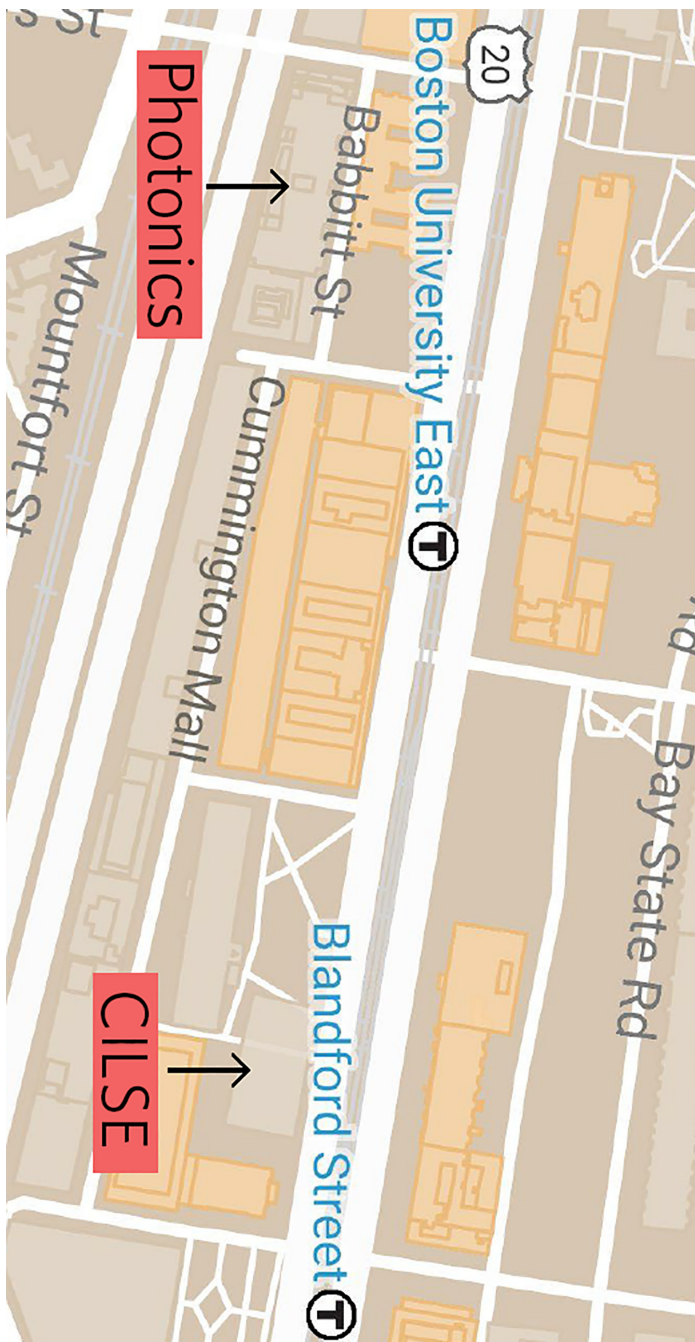
**BOSTON
UNIVERSITY**

**Theory in Biology 2018
Ecology, Metabolism and
the Origin of Life**

**May 24-25, 2018
Boston University**

SIMONS FOUNDATION

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Simons Foundation MMLS Program



Map of Campus

Thursday, May 24

8:00 - 8:30 AM

Registration
Photonics 2nd Floor Atrium

8:30 - 12:00 PM

Session 1
Photonics 206
Chair: Robert Marsland - Boston University

TBA

David Kessler - Bar-Ilan University, Department of Physics

Model building in community ecology: what can ecologists learn from physics

Jane Molofsky, University of Vermont, Department of Plant Biology

Coffee Break

Network signatures of niche processes in pathogen diversity

Mercedes Pascual, University of Chicago, Department of Evolution and Ecology

12:00 - 2:00 PM

Lunch and Posters
CILSE

2:00 - 5:30 PM

Session 2
Photonics 206
Chair: Daniel Segre - Boston University

Inverse modeling of metabolic networks

Andrea de Martino, Sapienza University, Soft and Living Matter Laboratory

Thermodynamics of open chemical reaction networks: Energy and information transduction in biology

Massimiliano Esposito, University of Luxembourg, Physics and Materials Science

Coffee Break

Body size, energetics, and the evolutionary history of life

Chris Kempes, Santa Fe Institute

Friday, May 25

8:00 - 8:30 AM

Registration
Photonics 2nd Floor Atrium

8:30 - 12:00 PM

Session 3
Photonics 206
Chair: Kirill Korolev - Boston University

What's love got to do with it? Stable marriage problem approach to composition and control of microbial ecosystems

Sergei Maslov, University of Illinois, Department of Physics

Resource competition constrained by metabolic trade-offs

Amir Erez, Princeton University, Department of Molecular Biology

Coffee Break

From individual-based processes to long-term evolutionary dynamics

Michael Doebeli, University of British Columbia, Department of Zoology

12:00 - 2:30 PM

Lunch and Discussion
CILSE

2:00 - 5:30 PM

Session 4
Photonics CILSE
Chair: Pankaj Mehta - Boston University

Emergent simplicity in stochastic individual-cell dynamics

Sri Iyer-Biswas, Purdue University, Department of Physics

A dynamic view of phenotypic variability in cell populations

Naama Brenner, Technion, Department of Chemical Engineering

Coffee Break

Evolution and Ecology in High Dimensions

Daniel Fisher, Stanford University, Department of Physics

5:30 - 5:45 PM

Concluding Remarks