



Prof. Sulfiana Manley
Laboratory of Experimental Biophysics
Institute of Physics of Biological Systems
BSP 427/Cubotron
CH-1015 Lausanne, Suisse
Tél (+41) 21 693 06.32
Fax (+41) 21 693 04 22
sulfiana.manley@epfl.ch
<http://leb.epfl.ch/>

It is our pleasure to invite you to the following seminar:

FRIDAY November 16th, 2018 at 10:00 am

Auditoire I, BSP 231, Cubotron/Unil, 2nd floor
(Bâtiment sciences physiques UNIL)

From single-cell variability and correlations across lineages to the population growth

by

Professor Ariel Amir

Assistant Professor of Applied Mathematics and Applied Physics, School of Engineering and Applied Sciences, Harvard University, USA

Genetically identical microbial cells often display diverse phenotypes. Stochasticity at the single-cell level contributes significantly to this phenotypic variability, and cells utilize a variety of mechanisms to regulate noise. In turn, these control mechanisms lead to correlations in various cellular traits across the lineage tree. I will present recent models we developed for understanding cellular homeostasis, with special focus on protein levels and cell size. These models allow us to characterize single-cell variability, including the emerging correlations and distributions. I will discuss the implications of stochasticity on the population growth. In contrast to the dogma, we find that variability may be detrimental to the population growth, suggesting that evolution would tend to suppress it.

Lab website: <http://amir.seas.harvard.edu/>