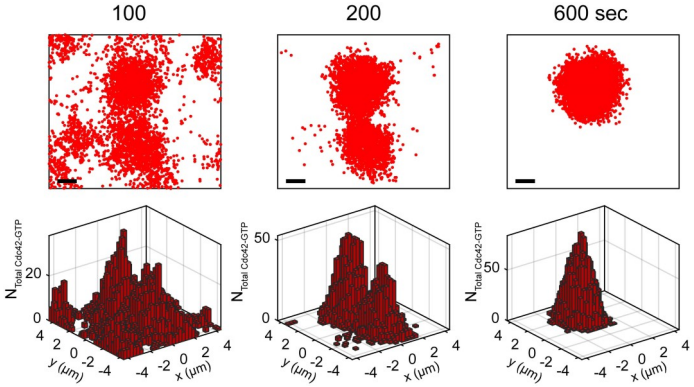
LAUFER CENTER
FOR PHYSICAL AND QUANTITATIVE BIOLOGY

Seminar 2018

Competition, coexistence and bistability in polarity establishment

Cell polarity refers to the asymmetric distribution of molecular components seen in many cell types. A key regulator of polarity is the Rho GTPase Cdc42. Positive feedback enables concentration of Cdc42 into clusters at the cell cortex, from where they regulate the cytoskeleton. We combine mathematical modeling, including particle-based simulations and reaction-diffusion equations, with experimental investigations to understand the mechanisms that drive polarity establishment in the yeast Saccharomyces cerevisiae. Our investigations reveal conditions for competition between and coexistence of Cdc42 clusters and reveal that the polarity circuit is a bistable system.



Timothy Elston

Professor of Pharmacology
University of North Carolina

Friday, April 20, 2018

2:30 PM

Laufer Center lecture hall 101

Host: Gabor Balazsi

Refreshments following the lecture
Laufer Hub 110

Stony Brook University

For a disability related accommodation, call 631-632-5400