

Molecular Genetics and Microbiology

Seminar 2016

The causes and consequences of non-genetic heterogeneity in cell proliferation

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PhD in genetics from Stony Brook University
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2013 Marie Curie fellowship
Lab focuses on the causes and consequences of
non-genetic phenotypic heterogeneity.

Long term evolution is driven by genetic heterogeneity. However, selection acts on phenotype, and a large part of phenotypic variability is driven by non-genetic heterogeneity. Heterogeneity in proliferation rates among genetically identical cells allows microbes to survive antibiotics, tumor cells to survive chemotherapy, and results in incomplete penetrance of disease mutations. However, neither the causes nor the consequences of non-genetic variability in cell proliferation are understood in any eukaryote. The aim of my lab is to determine the precise molecular events that generate heterogeneity within an isogenic population, and understand the evolutionary consequences of this variability. Our ultimate goal is to be able to control this variability, which has both clinical and biotechnological applications. In addition, we combine quantitative single-cell data and mathematical models to exploit biological heterogeneity in order to understand fundamental biological processes such as gene expression and fitness.

Wednesday, April 6, 2016

4:00 PM

Laufer Center Lecture Hall 101

Host: Bruce Futcher



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please call 631-632-5400