LAUFER CENTER
FOR PHYSICAL AND QUANTITATIVE BIOLOGY

Seminar 2018

Footprints in the Noise: Understanding gene circuit structure and function by analyzing fluctuations in expression

Fluctuations (noise) in molecular populations (e.g. mRNA, proteins) are an inescapable feature of gene expression. This noise may be detrimental to gene circuit function (e.g. in development) or an essential features (e.g. bet hedging in fate selection). Yet in either case, the structure of the noise – magnitude, frequency composition, sensitivity to changes in molecular populations – reveal details about the structure and function of the underlying gene circuits. This talk will describe the use of noise measurements and analyses to understand gene circuit structure and function in two very different systems: (1) expression from the HIV LTR promoter; and (2) cell-free expression with confinement and with crowding. These two experimental systems add understanding to how expression bursting, positive and negative feedback, resource sharing, and spatial correlations leave "footprints in the noise".

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Friday, April 6, 2018

11:00 AM Laufer Center 101

Host: Gabor Balazsi

Refreshments in Laufer Hub 110 after seminar

Stony Brook University

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