Seminar/Talk

Evolving strategies for life in an uncertain world

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Host: Fyodor Kondrashov

Molecular processes are fundamentally stochastic. Randomness is the rule in transcription, translation, cell-to-cell variation in protein levels, and heterogeneity in interactions. One common assumption is that such phenotypic variation is simply noise, and scientists often appeal to the statistics of large numbers when developing deterministic theories, ignoring any potentially adaptive role of epigenetic stochasticity. Yet evidence is accumulating that epigenetic variance constitutes an evolutionary driving force across diverse biological processes, including the persistence of pathogens under drug pressure or the development of cancerous neoplasms. All these systems are fundamentally characterized by high levels of environmental change and uncertainty: either persistent, global, temporal fluctuations in selection pressure, or local, micro-environmental and spatially-defined selective forces. In this talk, I will explore (epi)genetic strategies for fluctuating selection and the fundamental differences between local triggers and global spread in shaping molecular responses to environmental stochasticity.

Tuesday, March 13, 2018 10:00am - 11:00am
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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