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A QUANTITATIVE LOOK AT GENE REGULATION

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Abstract：Gene activity is the prime mover in the living cell, driving a cell's function at any given time. In my lab, we try to form a quantitative narrative for the stochastic process of gene regulation. This narrative is built upon precise measurements performed in individual cells, at the level of individual molecules and discrete events in space and time. To achieve this resolution, we use a synthesis of approaches, including classical molecular biology and biochemistry; single-cell and single-molecule fluorescence microscopy; and advanced image- and data analysis algorithms. By using coarse-grained theoretical models, we can distill our experimental findings into general principles, which can then be tested across different biological systems.

References:
Sanchez and Golding, *Science* (2013)
Sepulveda, Xu, Zhang, Wang, Golding, *Science* (2016)

About Speaker：Ido Golding, associate professor of Biochemistry&molecular biology at Baylor College of Medicine, and adjunct faculty of Bioengineering at Rice University. He was trained as a theoretical condensed-matter physicist at Tel Aviv University, Israel, and later spent five years learning the experimental arsenal of modern molecular biology at Princeton University. Prof. Ido Goldingestablished a record of developing new methods for making precise measurements of cellular processes, and using those methods to reveal unknown features of cell behavior, specifically: **stochastic kinetics of transcription, cell-fate choice in bacteriophage lambda, and bacterial chemotaxis**. He has published numerous papers on *Nature, Science, Cell, Nature Genetics, PNAS,*and etc. He is the receipt of Lewis Thomas Fellowship, NSF CAREER Award, Human Frontier Sceince Program Yong Investigator Award, Scialog Fellow, and etc.

时间：6月2日（星期四）15：00—16：40
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Photograph by Xiaodong Hu