

Lecture 1. Room at the bottom: Transcription one message at a time

Real-Time Kinetics of Gene Activity in Individual Bacteria Golding, I., Paulsson, J., Zawilski, S.M., Cox, E.C. 2005 Cell 123 (6) 1025-1036

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General properties of transcriptional time series in Escherichia coli Lok-hang So, L-H., Ghosh, A., Zong, C., Sepúlveda, L.A., Segev, R., Golding, I. 2011 Nature Genetics 43 554-560

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Lecture 2. Room at the bottom: Translation at the single molecule level

Gene location and DNA density determine transcription factor distributions in Escherichia coli Kuhlman, T.E., Cox, E.C. 2012 Molecular Systems Biology 8, art. no. 610

DNA-binding-protein inhomogeneity in E. coli modeled as biphasic facilitated diffusion Kuhlman, T.E., Cox, E.C. 2013 Physical Review E 88 (2) art. no. 022701

Cellular organization of the transfer of genetic information Campos, M., Jacobs-Wagner, C. 2013 Current Opinion in Microbiology 16 (2), pp. 171-176.

Wang, X., Llopis, P.M., Rudner, D.Z.
Organization and segregation of bacterial chromosomes
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Distance matters: The impact of gene proximity in bacterial gene regulation Pulkkinen, O., Metzler, R. 2013 Physical Review Letters 110 (19), art. no. 198101.

Non-Equilibrium Polar Localization of Proteins in Bacterial Cells

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Four-dimensional imaging of E. coli nucleoid organization and dynamics in living cells

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Lecture 3. One cell to many: morphogenesis in the Dictyostelids

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Flyvbjerg, H. 2011 Physical Biology 8 (4) , art. no. 046006

An excitable cortex and memory model successfully predicts new pseudopod dynamics Cooper,

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Chemotaxis: A feedback-based computational model robustly predicts multiple aspects of real

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Insall, R.H. 2011 PLoS Biology 9 (5) , art. no. e1000618

Brownian motion with active fluctuations Romanczuk, P., Schimansky-Geier, L. 2011 Physical

Review Letters 106 (23) , art. no. 230601

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pp. 1035-1057

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guided cues Jilkine, A., Edelstein-Keshet, L. 2011 PLoS Computational Biology 7 (4) , art. no.

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