



NIMBioS

National Institute for Mathematical
and Biological Synthesis



NIMBioS Interdisciplinary Seminar

Dr. Joshua Plotkin*
Mathematical Biology
Univ. of Pennsylvania

**NIMBioS Postdoctoral Fellows Invited Distinguished Visitor*

3:30 p.m. , Tuesday, April 24, 2012**

**At NIMBioS' new location: Philander P. Claxton Education Building,
1122 Volunteer Blvd, Suite 106**

“On the role of neutral mutations in adaptation”

Even though neutral mutations do not change an individual's phenotype, they can interact epistatically with other loci and alter the phenotypic consequences of subsequent mutations. I will discuss both theoretical and empirical examples of how such "conditionally neutral" mutations can facilitate adaptation of a protein or organism to a novel environment. In a simple population-genetic model, we find a broad regime for which increasing the mutational robustness of one phenotype accelerates the adaptation of a population to a new target phenotype. Likewise, phylogenetic analyses of influenza viral genomes identify hundreds of epistatic pairs of mutations that, in combination, allow the virus to evolve drug resistance and escape antibody pressure.

***Join us for refreshments at 3 p.m.*

For more information about this and other NIMBioS Seminars, visit

<http://www.nimbios.org/seminars>

The National Institute for Mathematical and Biological Synthesis (NIMBioS) brings together researchers from around the world to collaborate across disciplinary boundaries to investigate solutions to basic and applied problems in the life sciences. NIMBioS is sponsored by the National Science Foundation, the U.S.

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