



rEvolution

- Transcending the Past -

A 2 Day Bio-X Symposium on Modern Aspects of Evolution
March 12-13, 2012, 9am-5:30pm,
Clark Center Auditorium, Stanford University

Three quarters of a century since the "Modern Synthesis" and twice as long since Darwin and Mendel, evolution is still predominantly a historical discipline. Although the essence of evolution is dynamical and founded in an interplay between molecular and population level processes, this aspect has been hardest to study. Recent breakthroughs in DNA sequencing together with experimental and computational advances, are enabling evolution to be followed and manipulated as it occurs. This has sown the seeds for a revolution in the understanding of evolution.

Monday, March 12, 2012

- 8:45 Registration
- 9:00-9:15 **Daniel Fisher, Stanford**
Welcome and introduction
- 9:15 -10:15 **Richard Lenski, Michigan State University**
"Repeatability, Contingency, and Novelty: Findings from Two Evolution Experiments"
- 10:15-10:30 Coffee break
- 10:30-11:30 **Martin Ackermann, ETH Zurich**
"An Evolutionary Perspective on Bacterial Individuality"
- 11:30-1:00 Lunch at Nexus
- 1:00-1:15 **Marcus Feldman, Stanford**
Introductory comments on evolution at Stanford
- 1:15-2:15 **Scott Boyd, Stanford**
"Lymphocyte Responses to Vaccination and Infection"
- 2:15-3:15 **Karla Kirkegaard, Stanford**
"Suppressing Diversity and Restricting Spread in RNA Viruses"
- 3:15-3:45 Coffee break
- 3:45-4:45 **Carlo Maley, UCSF**
"Recent Surprises in the Evolutionary Dynamics of Neoplastic Progression to Cancer"
- 4:45-5:30 General discussion

Tuesday, March 13, 2012

- 9:00-9:15 **Stephen Quake, Stanford**
Introductory comments on technological developments
- 9:15-10:15 **Michael Desai, Harvard**
"The SABRmetric Approach to Experimental Evolution"
- 10:15-10:30 Coffee break
- 10:30-11:30 **Jerome Bibette, ESPCI, Paris**
"Bacterial Phenotypic Diversity Probed by Inoculum Miniaturization in Millifluidic Systems"
- 11:30-1:00 Lunch at Nexus
- Talks by Stanford postdocs:*
- 1:00-1:30 **Russell Monds**
"Synergy Between Experimental Evolution and Cell Biology: New Insight into Mechanisms of Morphogenesis"
- 1:30-2:00 **Benjamin Callahan**
"The Role of Niche Construction in the Evolution of Microbial Communities"
- 2:00-2:30 **Paul J. McMurdie II**
"Evolution of Dehalococcoides, an Unusual Microbe"
- 2:30-3:00 **Alan Bergland**
"Genomic Evidence for Natural Selection and Adaptation on Seasonal Time Scales in Drosophila Melanogaster"
- 3:00-3:30 Coffee Break
- 3:30-4:00 **Christopher Vollmers**
"Improving Accuracy and Throughput of Antibody Repertoire Sequencing"
- 4:00-4:30 **Dan Kvitek**
"Using Whole-Population Sequencing to Investigate the Evolutionary Dynamics of Parallel Adaptation"
- 4:30-5:00 **Sasha Levy**
"Lineage Tracking in Yeast by Sequencing of Random Barcodes"
- 5:00-5:30 General discussion