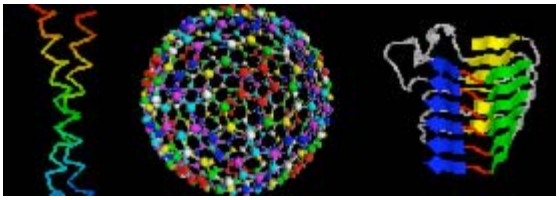
MIT
Department of Mathematics
& The Theory of
Computation Group
At CSAIL



Bioinformatics Seminar

Speaker: Zoltan Szallasi MD, Children's Hospital Informatics Program, Harvard Medical School
Title: Wheat, chaff, systems biology
Date: Monday, 6 December 2004
Time & Location:
Refreshments: 11 am in the Theory of Computation Lab at MIT's Building 32, Stata Center Room G-575
Talk: 11:30 am the Theory of Computation Lab at MIT's Building 32, Stata Center, Room G-575
URL: http://www-math.mit.edu/compbiosem/

Abstract:

Systems biology (making predictions about complex biological networks by non-obvious computational means), approaches problems from two different directions: detailed studies on small networks, such as applying control theory to understanding robustness and studying large genetic networks in order to extract more general overall design principles from biological systems. Both of these approaches require good quality, accurate data which is rather difficult to come by in the case of massively parallel approaches. This is largely due to the fact that massively parallel methods usually attempt to quantify a large number of heterogeneous molecules under a single measurement condition. In the case of gene expression microarray measurements, for example, most probes are expected to produce gene specific signals under a single hybridization condition. This has evidently not been achieved as attested by high levels of cross platform inconsistencies and frequent failure of independent validations of gene expression measurements produced by microarrays. This is caused by a number of factors, such as incorrect microarray probes, the issue of splice variants and cross hybridization. We will present probe sequence based methods to deconvolute a significant portion of noise and inconsistencies in microarray measurements.

The seminar is co-hosted by Professor Peter Clote of Boston College's Biology and Computer Science Departments and MIT Professor of Applied Math Bonnie Berger. Professor Berger is also affiliated with CSAIL & HST.

Massachusetts Institute
of Technology
77 Massachusetts Avenue
Cambridge, MA 02139

For General Questions, please contact kvdickey@mit.edu