

SIAM Conference on Life Sciences  
Portland Oregon  
July 11-14, 2004  
Final Technical Report

The conference enjoyed participation from outstanding research groups from both the United States as well as from overseas. The highlight of the meeting was the outstanding talks given by the 7 invited speakers:

\*Structure-guided Drug Discovery using Fragment-based Lead Identification/lead Optimization\*  
<<http://www.siam.org/meetings/ls04/burley.htm>>  
Jeff Blaney /(for Stephen K. Burley)/  
Structural GenomiX (SGX), Inc.

\*Modelling Autoimmune (Type 1) Diabetes  
<<http://www.siam.org/meetings/ls04/keshet.htm>>\*  
Leah Edelstein-Keshet  
The University of British Columbia, Canada

\*Comparative Gene Structure and Gene Expression: Lessons from the Arabidopsis genome\* <<http://www.siam.org/meetings/ls04/gaasterland.htm>>  
Terry Gaasterland  
Rockefeller University

\*The Structure and Nonlinear Robustness of Complex Ecological Networks  
<<http://www.siam.org/meetings/ls04/martinez.htm>>\*  
Neo Martinez  
Pacific Ecoinformatics and Computational Ecology Lab

\*Locomotion and Pattern Formation in Bacteria  
<<http://www.siam.org/meetings/ls04/oster.htm>>\*  
George Oster  
University of California, Berkeley

\*Modeling the Kinetics of Viral Infections  
<<http://www.siam.org/meetings/ls04/perelson.htm>>\*  
Alan Perelson  
Los Alamos National Laboratory

\*Neuronal Dynamics and the Basal Ganglia  
<<http://www.siam.org/meetings/ls04/terman.htm>>\*  
David Terman

Ohio State University

This organizing committee consisted of the following researchers:

Rustom Antia  
Emory University

Carson C. Chow (Co-Chair)  
University of Pittsburgh

Thomas Kepler  
Duke University

Claudia Neuhauser  
University of Minnesota

John Rinzel  
New York University

Tamar Schlick (Co-Chair)  
New York University

The conference brought together researchers seeking to develop and apply mathematical and computational methods in all areas of the life sciences. This conference provided a cross-disciplinary forum for catalyzing mathematical research relevant to the life sciences. It provided a forum to highlight the progress in:

Ecology, Environmental and Evolutionary Biology  
Genomics  
Imaging  
Neuroscience  
Physiology and Immunology  
Structural Biology  
Modeling Diseases  
Biomathematics in Industry

The conference had 130 minisymposia presentations, 128 contributed papers and 7 invited plenary speakers.