

CBIMMS Invited Seminar

“Automating Biology with Microfluidic Large Scale Integration”

Stephen R. Quake, PhD

**Professor of Applied Physics and Physics
California Institute of Technology**

Tuesday, March 16, 2004 2:00 PM B101 LSRC (Love Auditorium)

Field of Study

Dr. Quake's research group is concerned with fundamental and applied topics in biophysics, specifically single molecule science. Part of his effort is concerned with using biological molecules as model systems for studying physics. Some of the problems he has investigated include non-equilibrium dynamics, the possible existence of non-linear effects in the normal mode relaxation structure, and the effects of topological constraints such as knots on the statistical mechanics of a polymer. The other thrust of the research effort is using physics technology such as opto-electronics and microfabrication in order to build instruments for biology. Dr. Quake's lab is developing new instruments for sequencing DNA, an all-optical method for genotyping, and microfabricated devices to sort single molecules of DNA based on an optical measurement of length.