

Call for Applications: 2012 National Science Foundation Research Experiences for Undergraduates Program in Modeling and Simulation in Systems Biology

Grantor: Virginia Polytechnic Institute and State University

Closes: 2/6/2012

Maximum: \$6,000.00

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2012 Program Dates: May 30 - August 3

The Application Deadline is February 6, 2012

Are you a student majoring in a mathematical or computational science, interested in biomathematics? Are you thinking about graduate school in this field?

This great summer opportunity is for you! Be a part of this exciting state-of-the-art research experience.

What is modeling and simulation of biological networks?

Molecular biology has undergone a dramatic revolution during the second half of the twentieth century, beginning with the discovery of the structure of DNA. Since then a series of technological advances has given experimentalists the ability to make ever-more detailed measurements of an increasing number of molecular components of the cell. DNA microarrays, for instance, are small silicon chips spotted with short segments of DNA that can be used to measure the activity levels of thousands of different genes in tissue samples simultaneously.

Soon it might be possible to make large-scale quantitative measurements in a single cell. Being able to take such global snapshots of molecular processes has opened up the possibility of studying the changes that are constantly going on in cells as a coherent dynamical system with intricately interacting parts, rather than studying the parts in isolation. Similar developments in other fields of biology have revolutionized the availability of system wide data. Thus, the new field of systems biology has emerged. It makes heavy use of mathematical tools for modeling and simulation.

The approximate total monetary value is \$6,000 (this is including scholarship reimbursement, lodging & food)

• Scholarship reimbursement - \$3,500

• On-campus housing and meals are included

• Access and use of the library, and public transportation

• Social activities, scientific ethics workshop, workshops on giving presentations, and more

If you have any questions, or if you would like additional information, please contact:

Biomath Program Coordinator
Virginia Bioinformatics Institute
Washington Street (0477)
Virginia Tech
Blacksburg, VA 24061
email: biomath@vbi.vt.edu

Link: <http://biomath.vbi.vt.edu/>