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### **NIMBioS Hosts Tutorial on Optimal Control and Optimization for Biologists**

The National Institute for Mathematical and Biological Synthesis (NIMBioS) will host a tutorial in December to introduce selected topics in optimal control and optimization with an emphasis on biological applications.

"Optimal Control and Optimization for Biologists" will be held Dec. 15-17, 2009, at NIMBioS on the University of Tennessee, Knoxville (UTK), campus. The application deadline is Oct. 15. Tutorial organizers are Suzanne Lenhart, UTK Professor of Mathematics and NIMBioS Associate Director for Education, Outreach and Diversity and Michael Bevers from the U.S. Department of Agriculture's Forest Service in Fort Collins, Colo.

Introductory material on optimal control of ordinary differential equations and difference equations and some interactive computer labs will be included in sessions led by Lenhart. Mathematical programming and spatial optimization techniques will be demonstrated for managing natural resources under conditions of risk. Lectures and computer lab exercises will introduce linear, integer, nonlinear, stochastic and chance-constrained programming methods in sessions led by Bevers.

Lenhart will lead four lectures and two computer lab sessions, and Bevers will lead six lectures and several computer lab sessions.

Renee Fister of Murray State University will give a lecture on optimal control techniques applied to cancer modeling. Paul Armsworth of UTK's Department of Ecology and Evolutionary Biology will give a lecture on applications in conservation and natural resource management.

Participation is open but numbers are limited. Individuals with a strong interest in the topic are encouraged to apply. This tutorial is designed with biologists in mind, but other scientists and mathematicians can apply to participate. If needed, NIMBioS can provide support (travel, meals, lodging) for tutorial attendees.

For more information, visit [http://nimbios.org/workshops/TT\\_OptimalControl](http://nimbios.org/workshops/TT_OptimalControl)

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The National Institute for Mathematical and Biological Synthesis (NIMBioS) brings together researchers from around the world to collaborate across disciplinary boundaries to investigate solutions to basic and applied problems in the life sciences. NIMBioS is sponsored by the National Science Foundation, the U.S. Department of Homeland Security, and the U.S. Department of Agriculture with additional support from The University of Tennessee, Knoxville.

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