UCDAVIS UNIVERSITY OF CALIFORNIA Hydrologic Sciences Graduate Group Presents

Special Colloquium Series, Spring & Fall 2005:

Between Nature and Science:
Advanced Modeling Concepts for Environmental Sciences




Michelle Girvan

Santa Fe Institute

Insights into Complex Networks

November 17th
4:00-5:00pm
PES 3001
Light refreshments provided

Many systems take the form of networks: examples include the Internet, the World-Wide Web, distribution networks, neural networks, biochemical networks, food webs, and social networks. Drawing on techniques from statistical physics and dynamical systems, researchers have begun to take a complex systems approach to characterizing and modeling these networked systems, as they cannot be well-described by completely structured or completely random representations. Here, I will discuss the interplay between network structure and system dynamics in many of the aforementioned systems, reviewing recent advances in the field of complex networks.

Michelle Girvan *is a postdoctoral fellow at the Santa Fe Institute, having received her Ph.D. in theoretical physics from Cornell University in 2003. Her undergraduate degrees came from MIT in both physics and mathematics. Girvan's research focuses on applying methods from statistical physics, dynamical systems, and graph theory toward the understanding of complex networks, as they appear in social, biological, and technological systems. She is particularly interested in questions of system robustness and overlapping networks and timescales.*

Upcoming Speakers:

12/1	**Elizabeth Bradley**	Nonlinear dynamics, modeling, and the environmental sciences: ideas and tools

Sponsored By: John Muir Institute for the Environment, Computational Science and Engineering Center, Department of Civil and Environmental Engineering, Department of Land, Air, and Water Resources, Department of Chemical Engineering and Materials Science, Soil Sciences, Atmospheric Sciences, and Hydrologic Sciences Graduate Groups, College of Agriculture and Environmental Sciences, U.C. Cooperative Extension