

# SCIENCE at the Edge

*Traditionally distinct science disciplines are merging to create new opportunities. Share the excitement and challenge each week through seminars and discussions with nationally recognized pioneers in science at the edge.*

FALL SEMESTER 2001

MICHIGAN STATE UNIVERSITY

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UNIVERSITY

Seminars Begin at 11:30 a.m.,  
Refreshments Served at 11:15 a.m.

**Friday, September 7 - Room 224 Physics-Astronomy Building**  
Juyang Weng, Michigan State University  
*Autonomous Mental Development by Robots and Animals*

Friday, September 21 – Room 1208 Engineering Building  
Erdogan Gulari, University of Michigan  
*From Idea to Commercialization Development of a New Biochip*  
(Note: This seminar starts at 11:00 a.m.)

**Friday, September 28 - Room 224 Physics-Astronomy Building**  
Peter Bates, Michigan State University  
*Mathematical Modeling of Phase Transitions in Materials*

Friday, October 5 – Room 1208 Engineering Building  
Susan Sinnott, North Carolina State University  
*Nano-Fluidics and Mechanical Properties of Carbon Nanotube-Based Membranes and New Materials*

**Friday, October 12 - Room 224 Physics-Astronomy Building**  
Boris Shklovskii, University of Minnesota  
*Low Temperature Physics at Room Temperature in Water: Charge Inversion in Chemistry, Biology and Gene Therapy*

Friday, October 19 - Room 208 Biochemistry Building  
Joe Landman, MSC.Software, Supercomputing  
*Scalability Matters - Why We Need to Make Bioinformatics Programs Scalable, and Results from Work on Various Programs*

Friday, October 26 - Room 208 Biochemistry Building  
Gerhard Hummer, National Institute of Health  
*Computational Analysis of Water and Proton Movements in Proteins*

Friday, November 2 – Room 1208 Engineering Building  
Ramani Narayan, Michigan State University  
*Sustainable Bio-Based Materials*

**Friday, November 9 - Room 224 Physics-Astronomy Building**  
Mark Robbins, Johns Hopkins University  
*Where Does Friction Come From?*

Friday, November 16 – Room 1208 Engineering Building  
Christine Schmidt, University of Texas at Austin  
*Tissue Engineering Strategies for Nerve Regeneration*

Friday, November 30 - Room 208 Biochemistry Building  
Alexei Stuchebrukhov, University of California-Davis  
*Biological Charge Transfer*

**Friday, December 7 - Room 224 Physics-Astronomy Building**  
Geoffrey West, Los Alamos National Laboratory  
*The Tree of Life: Universal Scaling Laws in Biology from Molecules and Cells to Whales and Ecosystems*

## Seminar Organizers :

**Campus Theory Seminar:**  
M. F. Thorpe, Physics & Astronomy

**Engineering Interdisciplinary Seminar:**  
Virginia Ayres, Electrical and Computer Engineering  
John McGrath, Mechanical Engineering

**Center for Biological Modeling Seminar:**  
Shelagh Ferguson-Miller, Biochemistry & Molecular Biology  
Leslie Kuhn, Biochemistry and Molecular Biology

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Seminar details, including links to speaker homepages, are at:  
<http://www.pa.msu.edu/seminars/ctss/> and <http://biomodel.msu.edu/>