

***Traditionally distinct scientific disciplines are merging to create new opportunities. Share the excitement and challenge through seminars and discussions with nationally recognized pioneers in Science at the Edge.***

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**Fall Semester 2015**

Seminars are on Fridays at 11:30 a.m. with refreshments served at 11:15 a.m.  
1400 Biomedical and Physical Sciences Building (unless noted otherwise)

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**September 11 – Quantitative Biology/Gene Expression in Development & Disease Seminar**

Santiago Schnell, Department of Molecular & Integrative Physiology and Department of Computational Medicine & Bioinformatics at the University of Michigan Medical School  
*Sex, Reward or Death (in Fruit Flies)*

**September 18 – Quantitative Biology/Gene Expression in Development & Disease Seminar**

Sophia Lunt, Department of Biochemistry & Molecular Biology, Michigan State University  
*Cancer Metabolomics*

**September 25 - Interdisciplinary Physics Seminar**

Steven Girvin, Department of Physics, Yale University  
*Quantum Money, Information and Computation*

**October 2 - Quantitative Biology/Gene Expression in Development & Disease Seminar**

Thorsten Dieckmann, Biophysical Chemistry, University of Waterloo  
*Molecular Recognition and Catalysis in Ribonucleic Acids*

**October 9 - Quantitative Biology/Gene Expression in Development & Disease Seminar**

Edward Lyman, Dept. of Physics and Astronomy and Dept. of Chemistry and Biochemistry, University of Delaware  
*Title TBA*

**October 16 - Interdisciplinary Physics Seminar**

Haijun Gong, Department of Mathematics and Computer Sciences, Saint Louis University  
*Statistical Inference and Model Checking in Systems Biology*

**October 23 - Quantitative Biology/Gene Expression in Development & Disease Seminar**

Shirley Liu, Dana-Farber Cancer Institute and Harvard School of Public Health

## *Data-Mining for Cancer Gene Expression*

### **October 30 - Interdisciplinary Physics Seminar**

Nancy Makri, Dept. of Chemistry, University of Illinois at Urbana–Champaign  
*The Classical and Quantum Mechanism of Decoherence and the Quantum-Classical Path Integral Formulation*

### **November 6 – Interdisciplinary Physics Seminar**

Herbert Levine, Center for Theoretical Biological Physics, Rice University  
*Phenotypic Transitions en route to Metastasis—Can Theory Help?*

### **November 13 - Engineering Seminar**

Ali Jarvey, Electrical Engineering and Computer Sciences, University of California at Berkeley  
*Materials Innovations for Nanoelectronics, Flexible Electronic Skin, and PVs*

### **November 20 - Interdisciplinary Physics Seminar**

Sui Huang, Institute for Systems Biology Seattle  
*Critical State Transitions, Rebellious Cells and Why it is So Hard to Eradicate Cancer Cells*

### **December 4 - Quantitative Biology/Gene Expression in Development & Disease Seminar**

Maja Bucan, Genetics, University of Pennsylvania, Perelman School of Medicine  
*Family-Based Analysis of Bipolar Disorder in a Genetic Isolate*

### **December 11 - Quantitative Biology/Gene Expression in Development & Disease Seminar**

Deidre Meldrum, Department of Electrical Engineering in School of Electrical, Computer, and Energy Engineering, Arizona State University and Director, Center for Biosignatures Discovery Automation The Biodesign Institute at Arizona State University  
*Biosignature Discovery*

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#### **Organizers**

Carlo Piermarocchi ([carlo@pa.msu.edu](mailto:carlo@pa.msu.edu)) & Ruby Ghosh ([ghosh@pa.msu.edu](mailto:ghosh@pa.msu.edu))

Interdisciplinary Physics

Richard Lunt ([rlunt@egr.msu.edu](mailto:rlunt@egr.msu.edu)), Engineering

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Quantitative Biology/Gene Expression in Development & Disease