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NISS/SAMSI Affiliate Update

January 2012

SAMSI Events

Uncertainty Quantification Rare Events Workshop

When: February 13-14, 2012

Where: at SAMSI in Research Triangle Park, NC

The main aim of the workshop is to contribute to the development of efficient algorithms to simulate complex stochastic systems conditioned on the occurrence of a rare event.

Applications of rare event simulation methods include many engineered systems such as noisy optical laser systems, queuing networks, and mechanical reliability analysis, as well as financial risk, climate dynamics, and random graph and network models.

[Details here.](#)

Undergraduate Workshop

When: February 24-25, 2012

Where: SAMSI in Research Triangle Park, NC

This workshop will cover topics of current interest in statistics and applied mathematics with a particular focus on applications of uncertainty quantification. Deadline is Friday, January 27, 2012.

[Details here.](#)

Interdisciplinary Workshop for Undergraduates and Faculty

When: May 14-18, 2012

Where: at SAMSI in Research Triangle Park, NC

This week long workshop will provide an introduction to the field of uncertainty quantification (UQ) to students and faculty from the mathematical and statistical sciences. The overall goal of the workshop is to illustrate the need for and power of quantitative methods to confront the very hardest and most important data- and model-driven scientific challenges. A limited number of faculty will also be invited to attend a parallel workshop. While some lectures and the panels will be attended together with the students, most of the faculty activities will be conducted independently.

[Details here.](#)

SAMSI's 2012-13 Programs

Program on Data-Driven Decisions in Healthcare

Opening Workshop: August 26-29, 2012

Where: SAMSI in Research Triangle Park, NC

This year-long SAMSI program will address issues of mathematical and statistical theory and methodology that will improve evidence-based healthcare decision-making. The goals are to:

- Strengthen the link between data and decisions, a path that includes major challenges in mathematical modeling and statistical inference.
- Highlight and increase the role that statistics, applied mathematics and operations research can play in making data-driven healthcare decisions.

Featured Affiliate

The Department of Statistics at Rice University is a community of nine core faculty, eleven joint faculty, seventeen adjunct faculty, forty-five Ph.D. students and ten to fifteen undergraduate students. The department regularly hosts visitors from all over the world and it maintains an active post-doctoral program through NSF and NIH sponsorship.

In addition to the undergraduate B.A. degree, students may work towards one of the three graduate degrees offered: the professional master's degree, M.Stat (thesis not required); the research master's degree, M.A. (thesis required); and the doctoral degree Ph.D.

[Click here](#) for more info.

Useful Links

[NISS Website](#)

[SAMSI Website](#)

The program will have two principal—and intersecting—themes: Operations Research Modeling and Comparative Research Effectiveness. To learn more, [click here](#).

Program on Statistical and Computational Methodology for Massive Datasets

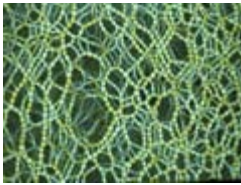
Opening Workshop: September 9-12, 2012
Where: SAMSI in Research Triangle Park, NC

This year-long SAMSI program focuses on fundamental methodological questions of statistics, mathematics and computer science posed by massive datasets, with applications to astronomy, high energy physics, and the environment. Serious challenges posed by massive datasets have to do with "scalability" and "data streaming". Techniques developed for small or moderate-sized datasets simply do not translate to modern massive data sets. Data acquisition rates on the order of gigabytes per second necessitate innovative approaches towards computing environments, analysis, and algorithms. For more information, [click here](#).

SAMSI's Summer Programs for 2012-13

Summer Program on Nonlocal Continuum Models for Diffusion, Mechanics and Other Applications

When: June 25 - 29, 2012
Where: SAMSI in Research Triangle Park, NC



Participants in the workshop will discuss modeling, mathematical, statistical, computational, and applications issues such as kernel choices, connections between nonlocal continuum models and discrete models, well posedness of the equations, finite element and other discretization methods, efficient solution methods for discretized systems, uncertainty quantification and applications including mechanics, image processing, graphs, diffusion and wave propagation.

[Details here.](#)

Summer Program on Computational Advertising

When: August 6 - 17, 2012
Where: SAMSI in Research Triangle Park, NC



The mathematical challenges that arise in computational advertising include massive, high-speed linear programming, better agent-based models for auction dynamics, and the computational finance behind dynamic management of the sales portfolio. The statistical challenges include modeling and forecasting of trends among users, prediction methodology for recommender systems, and modeling the revenue streams. [Details here.](#)

Co-Sponsored Events

Network of Greater Georgia Institutions for Neuroimaging and Statistics (NOGGINS) Workshop

April 20, 2012 at University of Georgia in Athens, GA. **ARA ELIGIBLE.**
[Details here.](#)

Southern Regional Council on Statistics Summer Research Conference

June 3-6, 2012 at Jekyll Island Georgia. **ARA ELIGIBLE.**
Details to come.

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