NISS/SAMSI Affiliate Update

January 2015

Save the Date!

Please save the date for the Spring Affiliates Meeting which will be held in conjunction with ENAR on March 15 in Miami, Florida. The Affiliates Committee is working hard on getting the agenda together now, so we will be sending more information about the meeting very soon.

NISS Job Opportunities

NISS plans to appoint several postdoctoral fellows/research analysts to be deeply involved in the statistical methodology, modeling and analysis of large statistical data bases. Fellows will participate in ongoing research collaborations between NISS and federal agencies and will conduct research in methodological development, implementation and data analysis of high importance and impact for inference and interpretation of federal data. Fellows will be located in Washington, DC. Current openings include collaborations of NISS with NASS (National Agricultural Statistical Survey). For more information, **click here**.

NISS also plans to appoint a Ph.D.-level research analyst/statistician to be deeply involved in the statistical methodology and application of large statistical databases. The research analyst will lead division-level and center-level work related National Center for Education Statistics (NCES) publications, and will participate in project data analysis using restricted NCES databases. The research analyst will be located in the Washington DC area, and interact strongly with NCES. He or she will report to both the Director of NISS and the NCES supervisor. For more information on this job, **click here**.

SAMSI Events

Undergraduate Workshop
When: February 26-27, 2015
Where: RTP, NC
Deadline to Apply: January 9, 2015.
This workshop will focus on ecology.
Details here.

Bioinformatics: Discovering Patterns in Human Microbiome Data
When: March 16-18, 2015
Where: RTP, NC
Deadline to Apply: February 6, 2015
The aim of this workshop is to create a forum for ideas for overcoming current and future challenges in the analysis of human

microbiome data. In this workshop, participants will learn how metagenomic (sequence-based) and metabolomic (mass spectroscopy-based) data are generated and the implications for analysis. Gaps in the current state-of-the-art methods will be highlighted, particularly with respect to the analysis of multivariate longitudinal data and the use of statistical experimental design to assess bias. Participants will break into research groups and will be asked to formulate plans to address the deficiencies of current methods. **Details here**.

Undergraduate Modeling Workshop
When: May 17-22, 2015
Where: NCSU, Raleigh, NC
Deadline to Apply: TBA
More details to come soon.

Summer Program: Uncertainties in Computational Hemodynamics
When: June 1-3, 2015
Where: SAMSI, RTP, NC
Deadline to Apply: April 6, 2015
During this workshop, bio-engineers, mathematicians, medical doctors, physiologists and statisticians will work collaboratively toward the resolution of three significant challenges in the context of computational hemodynamics: (i) stochastic modeling, (ii) big data approach and (iii) relevance in the clinical setting. The three-day event is structured so that one day will be devoted to each challenge, with a mix of talks and brain storming sessions. **Details here**.

Extreme Value Analysis and Applications
When: June 15-19, 2015
Where: Ann Arbor, MI
Deadline for Abstracts: Feb. 17, 2015
The 9th International Conference on Extreme Value Analysis and Applications, co-sponsored by SAMSI, features recent research on the probability and statistics of extreme value phenomena and its important applications to climate and weather, finance, insurance, engineering and computer science.
Details here.

Bayesian Nonparametrics Synergies between Statistics, Probability and Mathematics
When: June 29 - July 2, 2015
Where: SAMSI, RTP, NC
Deadline to Apply: May 4, 2015
Bayesian Nonparametrics (BNP) is a rapidly evolving area at the intersection of statistics, machine learning, probability and computer science. The focus is on modeling infinite-dimensional unknown objects that may consist of curves, surfaces, processes or probability measures.The goal of this four-day workshop is to bring together a group of leading researchers having different perspectives on BNP including "outsiders" working on related areas relevant to BNP, such as optimization and probability, with the goal of spurring new collaborative projects aimed at developing transformative new approaches and high impact scientific tools.
Details here.

Industrial Mathematics & Statistical Modeling Workshop
When: July 12-22, 2015
Where: NCSU, Raleigh, NC
Deadline to Apply: April 15, 2015
Graduate students in mathematics, engineering, and statistics will be exposed to challenging and exciting real-world problems arising in industrial and government laboratory research. Students will also experience the team approach to problem solving. Students are divided into six-member teams. **Details here**.

SAMSI's 2015-16 Programs

The following are the programs for 2015-16.

Challenges in Computational Neuroscience (CCNS)
The CCNS program will develop mathematical and statistical methods for neuroscience applications. These will be used to understand the underlying mechanisms that bridge multiple spatial and temporal scales, linking the activity of individual components (e.g., molecular biology, genetics, and neuron networks), and their interactions to the complex dynamic behavior of the brain and nervous system. Brain theory, modeling, and statistics will be essential to turn data into better understanding of the brain. The CCNS program will address the underlying methodological, theoretical, and computational challenges. Probability and statistics, dynamical systems, geometry, and computer science will be combined with respect to theory and in applications.

The opening workshop is scheduled for August 17-21, 2015. Go to the SAMSI website for details.

Program on Statistics and Applied Mathematics in Forensic Science (Forensics)
SAMSI's program on Forensics is focused on strengthening the statistical and applied mathematical foundations of forensic science. Forensic science is fundamentally based upon statistical comparisons of the characteristics of materials left at a crime scene to characteristics of possible sources or suspects. These comparisons are often acknowledged by forensic scientists to be highly subjective. A series of reports by the National Research Council (NRC) has raised deep questions about major forms of forensic evidence and has made a clear case for heeding statistical underpinnings for forensic procedures. Evidence from a crime include fingerprints, patterns and impressions (footprints and tire tracks), tool marks and firearms, hair, fibers, documents, paints and coatings, bloodstains, and fire debris. Working groups will focus on statistical issues for pattern evidence, for bias, for imaging, and for quality control for forensics laboratories. Crosscutting challenges are to identify where statistics can have a quick impact, and to educate mathematical scientists about forensics and forensic scientists about the mathematical sciences.

Opening workshop is August 31-September 4. Look at the SAMSI website for more details.

Postdoc applications for these two programs can be submitted to: mathjobs.org, SAMSIPD2015 Job #6133.

NISS and SAMSI
P.O. Box 14006, Research Triangle Park, NC
www.niss.org and www.samsi.info

NISS National Institute of Statistical Sciences

samsi NSF • Duke • NCSU • UNC • NISS