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NISS/SAMSI Affiliate Update

February 2013

Workshop on Spatial Methods for Federal Surveys

The NISS Affiliates Program is planning a Workshop on Spatial Mathods for Federal Surveys, targeted for September 2013 in Washington, DC. Anticipated topics include small area estimation, statistical mapping, combining spatial and sample based data, and methodologies for spatial sampling and estimation. Attendance is by invitation only and, for non-presenters, is limited to members of NISS Affiliate organizations. To express interest in making a presentation or otherwise contributing to the program, contact Workshop organizer Larry Cox, NISS Assistant Director for Official Statistics (cox@niss.org).

2013-14 SAMSI Programs

Program on Computational Methods in Social Sciences
This SAMSI program will bring together statisticians, computational mathematicians and social scientists to develop new methodology and applications in the context of modern social science datasets.

The structure of the program will revolve around three major areas where new statistical and computational methodology are being developed for social science problems: (a) social networks; (b) agent-based models; (c) new methodology for censuses and surveys. The three areas are not independent and there are many possibilities for interactions among them, for instance, in the use of network designs in surveys or in agent-based models as a tool for studying the evolution of dynamic social networks. Another likely theme is *causal inference*, which is a topic of interest in connection with all three of the major areas of the program. Click here for details on the program and how to apply.

Low-Dimensional Structure in High-Dimensional Systems
The LDHD program is devoted to the development of methodological, theoretical, and computational treatment of high-dimensional mathematical and statistical models. Possibly limited amounts of available data pose added challenges in high dimensions. The program will address these challenges by focusing on low-dimensional structures that approximate or encapsulate given high-dimensional data. Cutting edge methods of dimension reduction will be brought together from probability and statistics, geometry, topology, and computer science. These techniques include variable selection, graphical modeling, classification, dimension reduction in matrix estimation, empirical processes, and manifold learning. For more information and to apply, click here.

SAMSI Summer Programs

Featured Affiliate - Quintiles

Quintiles is the world's leading biopharmaceutical service provider. With a network of more than 27,000 professionals working in more than 80 countries, we have helped develop or commercialize all of the top 50 best selling drugs on the market.

Quintiles has substantial quantitative, analytical and applied technology capabilities, with hundreds of employees possessing Ph.D.s in mathematics, statistics, computer science or related fields. Its award-winning, innovative technology solutions have been recognized frequently by industry and IT experts including our top 10 ranking in the InformationWeek 500 for two years straight.

With more than 30 years of industry experience, Quintiles has taken the art of drug development and commercialization processes, making it into an evidence-based science, with quality and speed built in at every step. Over the past 10 years, Quintiles has started up 100,000 investigator sites, smoothing all the bumps along the way. When a customer needed an accelerated sales force build across seven countries, Quintiles recruited, trained and implemented highly effective field sales teams in just four months.

Quintiles brings to bear the strength and depth of its global resources with the local insights required to navigate today's complex

Neuroimaging Data Analysis

The term "Neuroimaging Data Analysis" (NDA) encompasses a broad array of imaging, mathematical, and statistical methods for the analysis of neuroimaging data. We will be analyzing high-dimensional, correlated, and complex neuroimaging data as well as clinical and genetic data obtained from various cross-sectional and clustered neuroimaging studies. The neuroimaging studies usually collect structural, neurochemical, and functional images as well as clinical and genetic data, all of which will be discussed during this program.

When: June 4-14, 2013
Where: Research Triangle Park, NC
Deadline to apply: May 3, 2013
Details here.

Modern Statistical and Computational for Analysis of Kepler Data

This three week mini-research program will focus on statistical and computational challenges associated with analyzing exoplanet data from NASA's Kepler mission. The Kepler mission is designed to survey a portion of our region of the Milky Way galaxy to discover dozens of Earth-size planets in or near the habitable zone and determine how many of the billions of stars in our galaxy have such planets.

The first day (Monday, June 10, 2013) will consist of invited talks (~20-30 minutes each + questions) chosen: 1) to highlight key problems that can be addressed using Kepler data, 2) to help participants understand the nature of Kepler data, and 3) to provide an introduction to selected statistical methods that are likely to be applied during the program.

When: June 10-28, 2013
Where: Research Triangle Park, NC
Deadline to apply: May 10, 2013
Details here.

LDHD Summer School

Please see the full program description above under Low-Dimensional Structure in High-dimensional Systems.
When: August 11-16, 2013
Where: Research Triangle Park, NC
Deadline to apply: July 12, 2013
Details here.

SAMSI Events

SAMSI/SAVI Workshop on Environmental Statistics

When: March 4-6, 2013
Where: Research Triangle Park, NC
Deadline to apply: February 8, 2013
Details here.

Transition Workshop, Data-Driven Decisions in Healthcare

When: May 9-10, 2013
Where: Research Triangle Park, NC
Details to come.

Undergraduate Modeling Workshop

When: May 13-17, 2013
Where: Research Triangle Park, NC and NCSU
Details to come.

2013 Industrial Mathematics and Statistics Modeling Workshop

When: July 15-23, 2013
Where: NCSU

global landscape. This expansive network of professionals are deeply committed to the work they do and have been recognized as creating a top ten best place to work by the Great Places to Work Institute.

For more information about Quintiles, **click here**.

Deadline to apply: April 15, 2013
Students are divided into six-member teams to collaborate on industrial projects presented by experienced scientists and engineers. The corresponding problems are not the kind of academic exercises often considered in classrooms. The challenges they raise typically require fresh new insight for both formulation and solution. During the workshop, each group is mentored by both the problem presenter and a faculty adviser.
Details here.

Dynamics of Seismicity, Earthquake Clustering and Patterns in Fault Networks
When: October 9-11, 2013
Where: Research Triangle Park, NC
Deadline to Apply: September 6, 2013
The workshop will highlight the key role of the mathematical sciences in studying seismicity dynamics in relation to properties of faults and the curst as an essential component of this interdisciplinary research endeavor. This is also an official activity as part of the 2013 Program of Mathematics and the Planet Earth.
Details here.

NISS and SAMSI
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NISS National Institute of Statistical Sciences

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