

NISS/SAMSI Affiliate Update

February 2014

NISS and SAMSI Welcome Baylor University as New Affiliate

NISS and SAMSI are happy to announce that Baylor University's Department of Statistical Science is the newest member of the affiliates program. The statistics department's Ph.D. and M.S. degrees in Statistics were first administered in 1991. Since that time the program has produced approximately 40 doctoral and 50 master level students.

Women in Statistics Conference

NISS and SAMSI are happy to be amongst the organizations sponsoring the Careers of Women in Statistics workshop that will be held May 15-17, 2014 at the Embassy Suites in Durham, North Carolina. This conference celebrates the achievements and career interests of women in statistics and is for women in all stages of career development, including senior, mid-level and junior-level individuals, as well as students. Professionals from academic, industrial and government institutions will be attending. There will be many networking opportunities including panels, round tables and plenary sessions to help you connect, learn and share with others. Registration will open in early February. NISS and SAMSI affiliates are eligible to use their ARA funds for this conference. For more information about the conference, [click here](#).

2014-2015 SAMSI Programs

"[Beyond Bioinformatics, Statistical and Mathematical Challenges](#)," will look at the statistical and mathematical challenges arising in the analysis of genomic and related data with the goal of addressing relevant biological questions. As genomic and related data are growing more complex, novel methods need to be developed to help with data synthesis and analysis to answer previously inconceivable questions about biological processes. This program will focus on: 1) Statistical pre-processing of emerging high throughput data; 2) Dependence in high-dimensional data; in particular, multivariate discrete counts; 3) Integration of multi-omics data; 4) Modeling dynamics of mixtures, such as populations of cells, variants and meta-genomics; and 5) Big data and machine learning for addressing 'omic issues.

The opening workshop will be held September 8-12, 2014.

Program leaders for "Beyond Bioinformatics" include: Alexander Alekseyenko, NYU School of Medicine; Karin Dorman, Iowa State University; Nick Hengartner, Los Alamos National Lab; Susan Holmes, Stanford University; Katerina Kechris, University of Colorado-Denver; Shili Lin, The Ohio State University; Dan Nettleton, Iowa State University and Hongyu Zhao, Yale University.

Featured Affiliate - University of Georgia Statistics Department

The Department of Statistics at the University of Georgia emerged as a separate department in 1984 after a split of the Department of Statistics and Computer Science, which had been formed in 1964. It retains a strong emphasis on computing and maintaining a state-of-the-art computing network. Computing is an integral part of the department's courses and research, with an interdisciplinary emphases to fundamental topics in the core of statistics.

The Department has 22 full-time faculty who are involved in research, consulting, teaching, and service for the University and the profession. Almost all faculty have a national or international reputation for their contributions, and all of the tenured and tenure-track faculty have active research programs. The faculty have received many research, teaching and service awards and include multiple elected fellows of the ASA and IMS. It has flourishing graduate and undergraduate programs with around 60 graduate students and more than 50 undergraduate students. Graduate students have been extremely successful in landing positions in academia, industry and government. Undergraduate students also have excellent job opportunities, but a significant number have gone on to outstanding graduate

"[Mathematical and Statistical Ecology](#)." This program brings together three groups of researchers – statisticians, mathematicians and theoretical ecologists – to study and develop the interactions among different approaches that ecological modeling has developed. One approach is that theoretical ecologists have developed mathematical models that are analyzed using traditional tools of applied mathematics, such as partial differential equations (PDEs) and dynamical systems. These models are then used to look at resilience, tipping points or other ecological properties. A second approach, typically used by statisticians and data analysts, involves sophisticated statistical tools such as Bayesian hierarchical models that are applied to large spatio-temporal datasets, but often these models are developed without the detailed consideration of nonlinear dynamics. Some of the topics that will be explored through the year include: 1) Critical thresholds and tipping points; 2) Resilience of ecological systems; leading indicators; 3) Multi-scale and multivariate statistical method; 4) Climate and Biodiversity; 5) Implications for public policy. There is also likely to be a joint working group between the two programs, on the topics of Landscape Genomics.

The opening workshop for this program will be held August 25-29, 2014.

Program leaders for "Mathematical and Statistical Ecology" include: Philip Dixon of Iowa State University, Lou Gross of the University of Tennessee and NIMBioS, Jennifer Hoeting of Colorado State University, Mevin Hooten of Colorado State University, Lea Jenkins of Clemson University, Claire Lunch of the National Ecological Observatory Network, Ron McRoberts of the US Forest Service, Jay Ver Hoef of NOAA, and Linda Young of the National Agricultural Statistics Service.

More information about either of these programs and how to get involved can be found on the SAMSI website:
<http://www.samsi.info>.

SAMSI Events

LDHD: SAMSI-CRM Workshop on Geometric Aspects of High-dimensional Inference

When: March 31-April 2, 2014

Where: Research Triangle Park, NC

Deadline to Apply: **February 14, 2014**

The workshop is a joint venture between SAMSI and Centre de Recerca Matemàtica (CRM) in Barcelona, Spain.

[Details here.](#)

Spring Opportunities for Women

When: April 9-11, 2014

Where: Knoxville, TN

Deadline to Apply: **January 20, 2014**

[Details here.](#)

CMSS Transition Workshop

When: May 5-7, 2014

Where: RTP, NC

[Details here.](#)

LDHD Transition Workshop

When: May 12-14, 2014

Where: RTP, NC

[Details here.](#)

Education and Outreach

Undergraduate Modeling Workshop

programs. These include graduate programs at Texas A&M University; Harvard University; University of North Carolina Chapel Hill; Georgia Tech; University of Georgia; University of Florida; and Johns Hopkins University. For more information about the department, [click here](#).

May 18-23, 2014

[Details here.](#)

Education and Outreach

Industrial Mathematical and Statistical Modeling Workshop for Graduate Students

When: July 14-22, 2014

Where: Raleigh, NC

More information to come.

Mathematical and Statistical Ecology Opening Workshop

When: August 18-22, 2014

Where: RTP, NC

See above for details.

Bioinformatics Opening Workshop

When: September 8-12, 2014

Where: RTP, NC

See above for details.

Co-Sponsored NISS Events

NOGGINS Workshop

Co-sponsored by University of Georgia Statistics Department

When: April 11, 2014

Where: Athens, Georgia

[Details here.](#)

Women in Statistics Conference

Co-sponsored by The Caucus for Women in Statistics

When: May 15-17, 2014

Where: Durham, NC

See story above for details.

Co-Sponsored SAMSI Events

Geometric, Topological and Graphical Model Methods in Statistics: Low-dimensional Structure in High-dimensional Systems

Co-sponsored by CANSSI/Fields Institute

When: May 22-23, 2014

Where: at the Fields Institute in Toronto, Canada

Details here.

Recruiting and Retaining Graduate Students in Statistical Sciences and Applied Mathematics

Co-sponsored by National Alliance for Doctoral Studies in the Mathematical Sciences

When: June 5-6, 2014

Where: RTP, NC

Application deadline is March 28

[Details here.](#)

Computational Methods for Surveys and Census Data in the Social Sciences

Co-sponsored by CANSSI/CRM

When: June 20-21, 2014

Where: Centre de Recherches Mathématiques (CRM) in Montréal, Canada

More information to come.

Summer Program: The International Surface Temperature Initiative

Co-sponsored by the Institute for Mathematics Applied to Geosciences

When: July 8-16, 2014

Where: Boulder, CO

More information to come.

NISS and SAMSI

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

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