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Positions

(1) Department of Statistics, UC Irvine: assistant professor

The Department of Statistics at the University of California, Irvine is hiring a tenure-track Assistant Professor to start in fall 2015. The department has a strongly interdisciplinary flavor, focused on developing methods to solve applied problems and advancing the statistical theory that underlies those methods. Current research strengths include Bayesian statistics, statistical machine learning, biostatistics, neurostatistics, astrostatistics, bioinformatics, statistical genetics, statistical education and geostatistics. Review of applications will begin on Dec. 15. More information about the position can be found at: https://recruit.ap.uci.edu/apply/JPF02638

For more information about the department, please visit:

http://www.stat.uci.edu/
(2) Department of Statistics, University of Florida: multiple associate/full professor positions

The Department of Statistics at the University of Florida is seeking to fill multiple positions at the Associate/Full Professor level in the area of Informatics. These hires are being made in conjunction with the launch of the UF Informatics Institute, a campus-wide initiative to explore new and fundamental research opportunities made possible by the rapid growth of data and computational capabilities across all areas of human endeavor.

The University of Florida is one of the largest and most comprehensive public universities in the country. UF is a land-grant, sea-grant and space-grant university, and on-campus home to the most comprehensive academic health center in the southeast. The Informatics Institute will benefit from UF's state-of-the-art research computing facilities, its wealth of data resources, and an excellent environment for collaborative research.

Successful candidates will have an independently established research program with a proven track record of publications in top journals and significant evidence of success in obtaining extramural funding. The positions require a Ph.D. in statistics or a closely related field.

Applications should be submitted to Statistics Search Committee, PO Box 118545, Gainesville, FL 32611-8545, and should include a cover letter, a current CV, a one-page research-and-teaching statement, and the names of three references. Review of applications will begin immediately and will continue until the positions are filled.

Candidates for employment are subject to a pre-employment screening which includes a review of criminal records, reference checks, and verification of education. The Department of Statistics is committed to equal access to educational and employment opportunities: minorities, women, and members of under-served groups are strongly encouraged to apply.

The University of Florida is an Equal Opportunity Institution.

(3) Department of Mathematics and Statistics, Texas Tech University: four positions

The Department of Mathematics and Statistics (M&S) at Texas Tech University invites applications for four tenure-track assistant professor positions beginning fall 2015. A Ph.D. degree at the time of appointment is required. M&S has active research groups in both pure and applied mathematics and in statistics (see [http://www.math.ttu.edu/FacultyStaff/research.shtml](http://www.math.ttu.edu/FacultyStaff/research.shtml)). The department fosters a spirit of interdisciplinary collaboration across areas of mathematics and statistics as well as with engineering and the physical and biological sciences. M&S is seeking candidates who will be engaged in nationally visible scholarship, establish externally-funded research
programs, interact with the existing research groups in the department, participate in interdisciplinary collaborations and service, involve graduate students in their research, and show excellence in teaching at the graduate and undergraduate levels.

One position will be in statistics, with a preference for candidates in probability theory/stochastic processes. The second position will be in biostatistics, with a preference for candidates who will collaborate with researchers in environmental toxicology, biological sciences and/or public health. The third position will be complex analysis and/or applications of complex analysis. The fourth position will be in mathematical and computational modeling, with a preference for candidates who will collaborate with researchers in biomathematics, applied mathematics and/or computational mathematics. Candidates with very strong records who will bring externally sponsored research to Texas Tech will be considered for associate or full professor ranks.

Please apply, using the Requisition ID 1818BR, at http://www.texastech.edu/careers/ 

Include a completed AMS standard cover sheet and a vita. Three letters of reference plus any material in addition to that completed online should be sent to:

Alex Wang, Hiring Committee Chair, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042. alex.wang@ttu.edu

Review of applications will begin immediately.

Texas Tech University is committed to diversity among its faculty. We strongly encourage applications from women, minorities, persons with disabilities, and veterans, and we consider the needs of dual career couples.

Texas Tech University is an Affirmative Action/Equal Opportunity Employer.

(4) Department of Biostatistics and Medical Informatics, University of Wisconsin Madison and Morgridge Institute for Research: tenure track (open rank)

The Department of Biostatistics & Medical Informatics (BMI) at the University of Wisconsin School of Medicine & Public Health (SMPH), in collaboration with the Morgridge Institute for Research (MIR), seeks a tenure track assistant/associate/full professor starting by August 2015. Candidates should have a PhD in Biostatistics, Statistics, Bioinformatics, Computational Biology, Biomedical Informatics, Computer Sciences, or a closely related quantitative area, and demonstrated ability to work in a collaborative, interdisciplinary environment.

Relevant expertise may include, but is not limited to, high-dimensional inference, data integration, graphical modeling, experimental design, network analysis, statistical genetics/genomics, machine learning, optimization, combinatorial algorithms, and image
analysis. Expertise in statistics related to genetics, genomics, or high-throughput biological experimentation is of especial interest. The incumbent will conduct, publish, and disseminate collaborative and methodological research at the forefront of his/her discipline, including maintaining his/her own independent research program. Attracting and maintaining external funding are parts of the position expectations. Responsibilities will include training graduate students, teaching one BMI course per year, and participating in professional, university, and community service appropriate to rank.

The successful candidate will join the BMI Department, home to faculty with expertise in bioinformatics; clinical informatics; image analysis; biostatistics; and statistical genetics and genomics. Faculty collaborate with scientists across UW and the state, including MIR, the Wisconsin Institute for Discovery, the Institute for Clinical and Translational Research, the Carbone Cancer Center, and the Marshfield Clinic Research Foundation. BMI maintains strong ties to the world-class Departments of Computer Sciences and Statistics, through which many of its graduate students are trained. BMI is home to a new Center for Predictive Computational Phenotyping, funded under the NIH “Big Data to Knowledge” initiative.

Simultaneously, the successful candidate will join an energetic team of investigators in the Virology Focus Area of MIR, which is furthering understanding and control of viruses and their roles in human disease. The interdisciplinary environment of MIR is ideal for quantitative methodological, statistical, and theoretical advances expected of a tenured or tenure track professor. MIR is part of the twin institutes of the Wisconsin Institutes for Discovery, a public-private initiative that facilitates interdisciplinary research and breakthrough discoveries to advance human health and well-being. The ultra-modern MIR laboratory and computational research facility, located on the central UW-Madison campus, has become a hub of collaborative scholarship.

The University of Wisconsin-Madison is a world-class academic institution with an international reputation for basic, applied, and interdisciplinary research. UW-Madison recently surpassed $1 billion in annual research expenditures and ranks third in the nation in science and engineering expenditures. Madison provides a vibrant, culturally rich environment highly ranked in national surveys for quality of life.

To ensure full consideration, applications must be received by December 15, 2014.

See PVL #80903:

AA/EOE. Women and minorities are encouraged to apply. Unless confidentiality is requested in writing, information regarding the applicants must be released upon request. Finalists cannot be guaranteed confidentiality. A criminal background check will be required prior to employment.
(1) NSF deadline reminders (from Steve Pierson, ASA Director of Science Policy)

Dear All,

Let me remind you of a couple upcoming deadlines for DMS programs (pasted from http://community.amstat.org/blogs/steve-pierson/2014/08/02/funding-opportunity-timelines):

Dec. 9  
NSF Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences (CDS&E-MSS)*

Dec. 10  
NSF Smart and Connected Health

Also,

- Letter of intent for Integrative Strategies for Understanding Neural and Cognitive Systems (NSF-NCS) due December 10:  

- National Science Foundation Division of Mathematical Sciences Seeking Program Directors and

- Frequently Asked Questions (FAQs) for NSF 14-599, Secure and Trustworthy Cyberspace (SaTC):  

Finally, let me ask you to please post any solicitations that you come across that we haven’t circulated. You can also send them to me.

(2) Dear Colleague Letter – NSF INSPIRE program


Dear Colleague Letter: Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

BACKGROUND

The Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) pilot seeks to support bold interdisciplinary projects in all NSF-supported areas of science, engineering, and education research. INSPIRE has no targeted
themes and serves as a funding mechanism for proposals that are required both to be interdisciplinary and to exhibit potentially transformative research (IDR and PTR, respectively). Complementing existing NSF efforts, INSPIRE was created to handle proposals whose:

Scientific advances lie outside the scope of a single program or discipline, such that substantial funding support from more than one program or discipline is necessary.
Lines of research promise transformational advances.
Prospective discoveries reside at the interfaces of disciplinary boundaries that may not be recognized through traditional review or co-review.

To receive funding as an INSPIRE-appropriate project, all three criteria must be met. INSPIRE is not intended to be used for interdisciplinary projects that can be accommodated within other NSF funding mechanisms or that continue well-established practices.

The implementation of the INSPIRE pilot is based on two overarching goals:

Goal 1: To emphasize to the science, mathematics, engineering and education research community that NSF is welcoming to bold, unconventional ideas incorporating creative interdisciplinary approaches. INSPIRE seeks to attract unusually creative high-risk/high-reward "out of the box" interdisciplinary proposals.

Goal 2: To provide NSF Program Officers (POs) with additional tools and support to engage in cross-cutting collaboration and risk-taking in managing their awards portfolios.

INSPIRE supports projects that lie at the intersection of traditional disciplines, and is intended to 1) attract unusually creative high-risk / high-reward interdisciplinary proposals; 2) provide substantial funding, not limited to the exploratory stage of the pursuit of novel ideas (unlike NSF's EArly-concept Grants for Exploratory Research, or EAGER); and 3) be open to all NSF-supported areas of science, mathematics, engineering, and education research. NSF will initiate an external formative assessment to test whether the INSPIRE pilot is achieving program and portfolio-level goals.

NSF support for INSPIRE projects is subject to the availability of funds.

SCOPE OF THE INSPIRE PILOT

Proposals meeting INSPIRE criteria will be considered for funding on any NSF-supported topic.
Proposals in response to this Dear Colleague Letter (DCL) may be submitted after August 01, 2014.
Awards will generally support an individual PI or a small team.
An INSPIRE award must be substantively co-funded by at least two intellectually distinct NSF divisions or disciplinary programs.
A maximum budget of $1 million applies for INSPIRE proposals/awards regardless of
the number of sponsoring programs beyond the minimum of two. Duration may be up to 5 years.

ELIGIBILITY FOR FUNDING UNDER THE INSPIRE PILOT

Proposals may be submitted by:

Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

NSF-sponsored Federally Funded Research and Development Centers (FFRDCs). Non-NSF-sponsored FFRDCs are not permitted to submit proposals under this INSPIRE DCL.

APPROPRIATENESS OF PROPOSALS FOR THE INSPIRE PILOT

INSPIRE is not intended to be used for interdisciplinary proposals that are appropriate for existing funding mechanisms or that continue well-established practices.

Prospective PIs must receive approval to submit a proposal from at least two NSF Program Officers, in intellectually distinct programs, whose expertise is most germane to the proposal topics. Consultations with POs prior to submission are required in order to aid in determining the appropriateness of the work for consideration under the INSPIRE mechanism. Only after approval is provided by at least two NSF POs in distinctly different research areas may a proposal be submitted.

INSPIRE PROPOSAL SUBMISSION

INSPIRE proposals must be compliant with the NSF Grant Proposal Guide (GPG), found at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg, unless a deviation from the standard proposal preparation instructions is indicated below. NSF will not accept collaborative INSPIRE proposals for a single project submitted separately from multiple organizations. A multi-organization INSPIRE project must be submitted as a single proposal requesting a single award with subawards administered by the lead organization.

The project title on the proposal Cover Sheet will be preceded by the prefix "INSPIRE:" to distinguish the submission from a regular proposal that would go through a regular review process.

Documentation from at least two NSF program officers confirming approval to submit a proposal must be provided in the Special Information and Supplementary Documentation section of proposal. An INSPIRE proposal submitted without the required program officer authorizations will be returned without review. This documentation represents the program officer's preliminary judgment that the project
might be appropriate for consideration under the INSPIRE grant mechanism; it is not a commitment to recommend support of a proposal with program funds. If the program officers find that the proposal idea is more appropriate for a regular review process than for INSPIRE, or that the idea does not appear to be promising as an INSPIRE project, they will so inform the principal investigator(s).

Requests may be for up to $1,000,000 and up to five years in duration. The award size and duration will be consistent with the project scope.

The proposal must explicitly address how the project is better suited for INSPIRE than for a regular NSF review process.

The proposal will be submitted electronically via FastLane or Grants.gov to one of the prospective co-funding programs, with the other program(s) identified on the proposal Cover Sheet.

INSPIRE PROPOSAL REVIEW CRITERIA

The standard NSB-approved merit review principles and criteria of intellectual merit and broader impacts apply, as augmented by:

Intellectual merit (interdisciplinarity): An INSPIRE proposal must address questions at the interfaces of more than one discipline, as opposed to incorporating disciplinary contributions additively. The proposal must identify and justify how the project is interdisciplinary, for example by:

- Combining concepts/methods from multiple fields in new, surprising ways;
- Proposing problem-driven research that requires a comprehensive and integrative approach to a grand challenge issue;
- Raising new fundamental questions or interesting new directions for research at the interface of disciplines; or
- Making major changes in understanding by integrating existing concepts or methods in new ways to address complex phenomena.

Intellectual merit (transformative potential): An INSPIRE proposal must be potentially transformative. The proposal must identify and justify what is potentially transformative in the project, by showing specifically how at least one of the following characteristics is fulfilled:

- Challenges conventional wisdom;
- Leads to insights that enable new techniques or methodologies; or
- Redefines the boundaries among disciplines of science, mathematics, engineering, or education.

The justification must be specific, e.g., what form of conventional wisdom is being challenged and what is the pathway and potential for overturning it.

Broader impacts: Unusual promise for societal benefit is highly valued in a proposal, in the spirit of the NSF strategic plan goal to innovate for society.
The proposal must address explicitly how the project is better suited for INSPIRE than for a regular NSF review process. For example, if the project is of such a high-risk nature that it could meet resistance from conventional reviewers, this could be explained and justified.

INSPIRE REVIEW PROCEDURE

Only internal merit review is required for INSPIRE proposals. Under rare circumstances, Program Officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria will apply. Additionally, the interdisciplinarity and transformative potential of the project will be evaluated within the intellectual merit of the proposal.

On the basis of the review criteria, the cognizant program officers will decide whether to recommend an INSPIRE proposal for co-funding from their programs. An NSF working group, made up of representatives from all NSF directorates and the Office of International and Integrative Activities (OIIA), will be asked to validate each award recommendation regarding its appropriateness for the Foundation-wide interdisciplinary INSPIRE award portfolio.

Renewed funding of INSPIRE awards may be requested only through submission of a proposal that will be subjected to full external merit review. Such proposals may be designated as "INSPIRE renewals".

A decision and feedback will be sent to the principal investigator(s) explaining the rationale for the decision. No reconsideration of declined INSPIRE proposals is allowed. By selecting the INSPIRE pilot, the principal investigator and submitting organization choose an alternative review process and waive the option of reconsideration. This is analogous to the Proposal and Award Policies and Procedures Guide (PAPPG) provision for the existing Grants for Rapid Response Research (RAPID) and EAGER mechanisms.

Your questions, feedback, and most of all, your exceptionally creative proposals are welcome as we continue to move forward.

In order to begin the inquiry process, prospective INSPIRE PIs should contact directly only those NSF Program Officers whose expertise is most germane to the proposal topics. The signatories to this DCL are NOT points of contact for such inquiries. Additional questions can be directed to inspire@nsf.gov.

Sincerely,

Wanda E. Ward, Office of International and Integrative Activities
John C. Wingfield, Directorate for Biological Sciences
Farnam Jahanian, Directorate for Computer and Information Science and Engineering
Joan Ferrini-Mundy, Directorate for Education and Human Resources
Pramod P. Khargonekar, Directorate for Engineering
Roger Wakimoto, Directorate for Geosciences
The American Statistical Association (ASA) has endorsed new guidelines for the undergraduate statistics curriculum that will help ensure bachelor’s graduates have the necessary capacities to use data to make evidence-based decisions.

The ASA Guidelines for Undergraduate Programs in Statistical Science were adopted last week at a meeting of the ASA board of directors and replace guidelines adopted in 2000. The updated guidelines were developed by a work group of ASA members chaired by Nicholas Horton, professor of statistics at Amherst College. This group recommended adapting the undergraduate curriculum to account for the increased importance of data analysis, teamwork, communications and other relevant skills and experiences in today’s practice of statistics and a dramatic increase in student interest in earning an undergraduate statistics degree.

“These new guidelines recognize the increasing importance of the practice of statistics to solving the complex problems faced by business, industry and government entities,” said Horton. “The oft-quoted McKinsey & Company report foretells a shortage of up to 190,000 workers with deep analytical skills and 1.5 million managers and analysts to manage data projects. A large number of these workers will be holders of bachelor’s degrees in statistics. These new curriculum guidelines will help ensure they have the skill set to tackle the more rigorous data analysis challenges that our society faces. These data-analytics skills are needed by society and employers in our increasingly information-rich world.”

Figure 1: Statistics degrees at all levels in the United States. These data include the following categories: biostatistics; statistics; mathematical statistics and probability; statistics, other; and mathematics and statistics, other. Source: The Integrated Post-Secondary Education Data System Completions Survey, National Center for Education Statistics, ncesdata.nsf.gov/webcaspar.
The ASA report also notes enrollments in statistics classes have increased dramatically. The Integrated Post-Secondary Education Data System Completions Survey, conducted by the Department of Education’s National Center for Education Statistics, shows the number of bachelor’s graduates in statistics has increased more than four-fold since the ASA guidelines were first issued: from 380 in 2000 to 1,656 in 2013.

The key curriculum updates recommended in the ASA Guidelines for Undergraduate Programs in Statistical Science are the following:

**Statistical Methods and Theory** – Undergraduate statistics students need a deep understanding of fundamental concepts, as well as exposure to a variety of topics and methods such as statistical theory, exploratory data analysis, design of studies and statistical models.

**Data-Related Topics and Computation** – Undergraduate statistics majors need facility with computation to be able to handle increasingly complex data and sophisticated approaches to analyze it. They need the ability to manage and restructure data. Such skills underpin strategies for assessing and ensuring data quality as part of data preparation and are a necessary precursor to many analyses. Among the skills cited are the following:

- Use of one or more professional statistical software environments and multiple data tools
- Data manipulation using software in a well-documented and reproducible way
- Key programming concepts
- Computationally intensive statistical methods

**Mathematical Foundation** – Undergraduate statistics majors should have a firm understanding of why and when statistical methods work. They should be able to communicate in the language of mathematics and explain the interplay between mathematical derivations and statistical applications based on their knowledge of calculus, linear algebra, probability and connections between concepts in these mathematical foundation courses and their applications in statistics.

**Statistical Practice** – Undergraduate curricula must provide ample opportunities to practice the work of being a statistician. Strong communication skills are particularly necessary for statisticians and complement technical knowledge to ensure results are made available in an accessible and accurate manner. These skills include effective technical writing, presentation skills and visualizations; teamwork and collaboration; and the ability to interact and communicate with a variety of clients and collaborators.

**Pedagogical Considerations** – The approach to teaching this curriculum should model the correct application of statistics such as:

- Emphasize authentic real-world data and substantive applications related to the statistical analysis cycle
- Develop flexible problem-solving skills
- Present problems with a substantive context that is both meaningful to students and true to the motivating research question
- Include experience with statistical computing and data-related skills early and often
- Encourage synthesis of theory, methods, computation and applications
• Provide opportunities to work in teams
• Integrate training in professional conduct and ethics
• Offer frequent opportunities to refine communication skills, tied directly to instruction in technical statistical skills
• Incorporate regular assessment to provide authentic feedback

“These guidelines will ensure undergraduate statistics programs provide their students appropriate training for a career in statistics,” says ASA President-elect David Morganstein. “The ASA leadership and the members of the undergraduate guidelines work group strongly encourage the leaders and faculty of each undergraduate statistics program to read and apply these updated guidelines so their students are fully prepared to thrive in our increasingly data-centric world.”

“There is a pressing need to ensure we have quantitative scientists, including statisticians, with the ability to bridge the technology and information transfer gap in order to accelerate our understanding of disease biology, etiology and prognosis and innovations in disease prevention and treatment,” said Xihong Lin, professor of biostatistics at Harvard University’s T.H. Chan School of Public Health and member of the Committee on Applied and Theoretical Statistics at the National Research Council. “These guidelines are very timely, insightful and thoughtful. They can help to prepare this next generation of analysts to effectively translate these data into knowledge and contribute to making new discoveries in health sciences.”

The report also includes recommendations for curriculum topics for minors or concentrations in statistics and discussions about the relationships of the undergraduate statistics curriculum with the growing number of high-school and community-college courses in statistics and master’s programs in statistics.

Horton also noted a variety of white papers are in development that will help steer undergraduate statistics departments through the process of implementing the new curriculum guidelines. Topics broached in these papers will include “data science and the undergraduate curriculum,” “learning outcomes for undergraduate programs in statistical science” and “roadmap for smaller schools.”

Click here to access the complete undergraduate statistics guidelines and related white papers and webinars.