

NISS

PARAMETERS

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FROM THE DIRECTOR'S DESK



In 2016, NISS made its mark on two important national problems. For NASS (National Agricultural Statistical Services, in the USDA) NISS convened a panel of technical experts to examine how women's and young farmers' contributions to US farm operation were represented in data from the US Census of Agriculture. Recommendations from this panel resulted in significant changes to ensure that women and young farmers are not overlooked. These changes are now implemented for the 2017 US Census of Agriculture.

Also in 2016, NISS completed the report of a panel of technical experts convened by NISS to review the National Center for Education Statistics (NCES, in the Department of Education). The report of this overview of the Center and its function was released early in the new year and can be found on the NISS website.

In 2016 to NISS' great regret, SAMSI decided to end the decade and a half era of NISS-SAMSI kinship as SAMSI's emphasis continued to shift toward the applied mathematics in its middle name. SAMSI's initial decision covered all aspects of the direct relationship with NISS and included, in particular, the joint NISS-SAMSI Affiliates Program. Subsequently, SAMSI determined that it would relocate away from NISS to pursue its path to the future.

SAMSI's departure opened the door for NISS at the start of 2017 to reconfigure the NISS Affiliates Program benefits to encompass statistical programs and conferences at all the North American mathematics and statistics institutes – including SAMSI, of course.

In 2017, NISS also reconsidered its own title: National Institute of Statistical Sciences. No longer needing to be restricted to a bricks-and-mortar definition, NISS is spreading its wings to create new foci to support sustained activities both in-person and virtual, on the west coast as well as in Washington, DC and in the Triangle in North Carolina (with yet another location just about to start up – watch for an announcement at the JSM Affiliates Luncheon).

It is impossible not to be nostalgic about the beautiful NISS building in Research Triangle Park. But with modern institute life becoming heavily virtual/remote and intermittently involving personal presence, NISS is fortunate to be able to make this transition. A (business) purchaser for the NISS building has been identified and terms of sale negotiated that will allow NISS to shed the role of landlord and return the use of NISS assets to the development of research projects and collaborations on problems of national impact.

In Washington, DC, 2017 has brought a major renewed 5-year contract with NCES and renewal of IPA and postdoctoral support agreements with NASS. After almost a year of paperwork and processing, NISS is now listed on the GSA schedule that allows NISS to be a "preferred contractor" and to join a highly restricted pool of firms eligible to offer proposals to many federal agency requests for services. The first fruit of this GSA schedule status has come in the form of a contract awarded by NASS for NISS to assemble a panel of technical experts to consider how best to report the new detailed data on farm operators that are about to be gathered in June 2017 as part of the US Census of Agriculture.

There will be more news as NISS spreads its wings wider geographically and expands the scope of NISS activities and programs in 2017. Join NISS at the Affiliates Luncheon and at the NISS Annual Reception at JSM – and visit the NISS Expo Booth #104 to find out the latest and to sign up to participate.

Sincerely,

Nell Sedransk, Director

SAVE THE DATES: JOIN NISS AT THE JOINT STATISTICAL MEETINGS (JSM) IN BALTIMORE, MARYLAND

Affiliates Luncheon – Sunday, 30 July, 11a.m.-2p.m.

NISS Reception – Monday, 31 July, 6-8 p.m.

NISS EXPO Booth – Go to #104 to see what is new

NISS Spreads Its Wings, the theme for NISS activities in 2017-2018, will be launched at the Joint Statistical Meetings (JSM) Conference, in Baltimore, Maryland, July 29 to August 3, 2017.

As NISS truly embraces its name – National – the first announcements of expansion will be made at the Affiliates Luncheon on Sunday, 30 July, 11 a.m. – 2 p.m. Affiliate Liaisons and Junior Liaisons are invited to register on the NISS website (no fee, but advance reservations required for the lunch). Liaisons wishing to bring prospective new Affiliate representatives as guests to the luncheon are encouraged to contact the Chair of the Affiliates Recruitment Committee, Jim Rosenberger (JLR@psu.edu) or Randy Freret at NISS (rfreret@niss.org).

The Annual NISS Reception at JSM on Monday, 31 July, from 6 – 8 p.m. will focus on the NISS theme, highlighting both the geographic broadening and the expansion of the scope of NISS activities.

The Jerome Sacks Award for Cross-Disciplinary Research will be presented at the NISS Reception. This award honors Jerry Sacks, first Director of NISS and distinguished statistician who made significant contributions to the Statistics bridge theory, methodology and collaborative science and engineering.

Visitors to the NISS Expo Booth - #104 – can meet NISS Board members and senior Liaisons and also chat with Junior Liaisons from NISS Affiliates to learn about NISS activities planned for fall from the east to the west coast. Information about becoming an Affiliate institution will be available, as well as information about personal involvement with NISS either as participant or planner of activities. Learn about the NISS Postdoctoral Program and pick up news about some past NISS postdocs and their current careers. Cast a vote for the next NISS Explorations Workshop topic! And express your preferences for new opportunities and/or locations for NISS activities.

“Over the past years, many of the best ideas for NISS have come from informal conversations – the NISS Expo Booth offers a great opportunity for these kinds of dialogues,” said Nell Sedransk, NISS Director, adding, “So we encourage people to join us at the JSM to learn more about what we do.”



Participants at JSM 2016

ABOUT NISS

NISS is a national institute that delivers high-impact research in science and in public policy by leveraging the rich expertise of its staff with that of its base of affiliated organizations in academia, industry, and government. NISS works on issues where information and quantitative analysis are keys to solutions and decisions. NISS functions in three ways: as an expert advisor, as a basic researcher, and as a collaborator.

While NISS and SAMSI separated their official relationship in 2016, NISS is committed to continuing the mission and further strengthening of the NISS Affiliates Program through sponsorship of more conferences and increased flexibility in the ways Affiliate Award Funds (AAF) can be utilized. For Affiliates from Academia and from Industry, the latter includes making direct AAF conference support available for Affiliate-hosted conferences and for expanding conferences eligible for travel reimbursement from AAF. This includes all CANSSI-hosted workshops, and all conferences with statistical focus from all NSF-DMS institutes, including SAMSI. New opportunities and enhanced perks for Affiliates will be announced at the Affiliates Luncheon at JSM.



NISS AT THE 2017 CONFERENCE ON STATISTICAL PRACTICE

NISS affiliates and Board members represented NISS at the Conference on Statistical Practice (CSP) held in Jacksonville, Florida from February 23-25, 2017. Reaching out to statisticians in business and government, the conference aimed to provide participants with opportunities to learn new statistical methodologies and best practices in statistical analysis, design, consulting, and statistical programming.

David Banks, NISS Assistant Director, delivered the keynote address highlighting the challenges in pursuing a career in statistics. In his keynote address entitled, "Snakes and Ladders: Challenges in Forging a Career in Statistics," Banks shared tips on how to be successful. They included such apothegms as "You cannot be promoted in government or business until you have trained someone to take over your job" and "Reading the newspaper every day makes you seem like someone who is thoughtful and informed."

excellent resampling methods that allow quantification of uncertainty by calculating standard errors and confidence intervals and performing significance tests. Hesterberg also delivered a talk on the theme, "In this corner: XI! When model variables compete." Both the tutorial and talk were well received by participants.

Additionally, NISS Affiliate experts made technical presentations at the conference with the aim of demonstrating how to effectively apply new statistical tools to old problems and old tools to new problems. The conference also featured technical presentations on statistical computing techniques such as R-programming and text mining and on experimental design.

The 2017 CSP was attended by more than 400 statisticians representing industry, government, and academics. Look out for NISS next year at the 2018 CSP in Portland, Oregon.



Participants seen networking and learning from each other at the 2017 CSP.



David Banks, NISS Assistant Director, left, being introduced before making his keynote address.



Tim Hesterberg, Senior Statistician at Google, also a NISS Board Member delivering a tutorial

Banks highlighted the work of NISS at the conference and elaborated on how the NISS Postdoctoral Program helps postdocs build competencies, gain experience, and increase visibility at the early stage of their statistical career. Banks said, "Statisticians face different challenges at different stages of their careers and in this journey, it is important that statisticians grow their social networking," adding, "Both industry and government are continually on the lookout to recruit talented people, and partnering with NISS will provide the technical skills and the required connections to achieve that level of professional growth."

Tim Hesterberg, Senior Statistician at Google, also a NISS Board Member, presented two tutorials on the fundamental and versatile statistical tools, "Bootstrap Methods and Permutation Tests." These tests are



Panelists, from left, Ya Mo, NISS Research Associate, Zhulin He, Assistant Professor of Statistics at Iowa State University, Xia Wang, Assistant Professor of Mathematical Sciences at the University of Cincinnati (US), and Nell Sedransk, NISS Director.

"MENTORING...AND GIVING BACK" AT THE 2016 WSDC CONFERENCE IN CHARLOTTE, NORTH CAROLINA

Effective mentor-to-mentee relationships was the theme for the National Institute of Statistical Sciences (NISS) panel discussion at the 2016 Women in Statistics and Data Science (WSDS) conference hosted by the American Statistical Association (ASA). Three current and past NISS postdoctoral fellows joined Nell Sedransk, NISS Director in addressing the theme "Mentoring...and Giving Back." Ya Mo, NISS Research Associate, Zhulin He, Assistant Professor of Statistics at Iowa State University and Xia Wang, Assistant Professor of Mathematical Sciences at the University of Cincinnati (US) spoke about making the transition from being mentored to becoming mentors themselves. The four women at different stages in their professional careers presented their individual perspectives on the expectations, qualities, and goals to make the most out of mentorships.

Sedransk opened the discussion by individually asking Mo, Wang and He what they looked for in a mentor. "I wanted my mentor to provide reassurance that I was taking the right path all through the program," said Mo, the most recent Ph.D. (2015) graduate. "I wanted to know that the struggles I was experiencing were normal and that I was doing fine," she added. Mo's Ph.D. mentor explained to her that some students come into a Ph.D. program with a clear idea of which topic they plan to study, then immediately commit to specific courses, research projects, and dissertations, while other students take the time to explore various fields before committing to a single subject.

"That information was both helpful and essential to my success," said Mo, adding, "I hope to someday be a reassuring and supporting mentor by helping my mentees see the big picture and foresee the difficulties that students will likely encounter." Mo sees the gain of knowledge from various subdomains if one chooses to explore the field before choosing a topic early in a Ph.D. program but at a potential cost of uncertainty and anxiety. Mo summed up by saying, "I hope that my mentees are well prepared for their choices."

Echoing Mo's perspective, Dr. He reflected on her own mentor's role in helping her choose a career path during her time studying in Canada. "I was looking for a simple and consistent plan," said Dr. He. He initially chose a specific program that would lead her to graduate in two years, followed by a strong recommendation from her mentor that would place her in an industrial job immediately thereafter. However, plans changed. He said, "to my relief, my mentor was very supportive of my new plans and decisions." He continued, "I plan to carry the same level of flexibility that my mentor gave me on to my own mentees," adding, "It's important to set expectations, respect and support each student's decision, and plan ahead to prepare for a change to the original plan if necessary."

Mo discussed the need to solidify the date and time when the mentor and mentee will meet next at the end of every meeting. This is because established scholars



often have demanding schedules that limit their availability as mentors. This requires proactive communication from mentees. Mo recollected, "My mentor cared about her students, but she was also extremely busy because of research, teaching, and services." When I sent an email to my mentor for a meeting, it often took a week or more to hear back from her. Wang agreed, "It's important to talk with mentors regularly for advice on moving to the next stage."

The panel expanded on the role of communication in mentoring, agreeing that mentees must be able to gain a clear grasp on the subject matter to ask for help when necessary. "It's very helpful for the mentor to know what is going on, what to do next and what the mentee needs." Dr. He noted that when she worked with her Ph.D. advisor, she was afraid to make mistakes while speaking. "I spoke very little at first, making my mentor think I was a very shy person. Later, I realized that the more I was afraid, the more mistakes I made." Sedransk also emphasized the need for communications between the mentor and mentee saying, "The more communication there is, the better chance you have of getting it right."

"An example speaks louder than words," says Mo. When Sedransk and Mo collaborated on a research project, Sedransk wrote up the patterns she observed for the math achievement in the regression tree analysis. "It helped me actually see how to observe and write-up patterns for other subject areas," explained Mo. Visual demonstrations have proven to be a successful approach to combat language barriers for Mo.

While mentorships are designed to promote career advancement, both mentors and mentees may struggle to maintain a balance between their professional and personal lives. "The better you are, the harder you will have to work to find a balance," said Sedransk. Mo recalled a difficult time during her Ph.D. program when she was grateful for her mentor's compassion. My mentor told me to have faith that the decisions I make in my personal and professional life will all work out for the best. "That kind of reassurance is extremely comforting."

Nonetheless, a line must be drawn when students seek their mentor's guidance in private life affairs. From a mentor's perspective, Sedransk said that mentorship must remain professional, as mentoring is a directional relationship - not peer-to-peer. "I can attest to that being a real problem and a very difficult one when either the mentee or the mentor is dealing with a deeply serious issue in her personal life. As a mentor, I'll give the flexibility I can, but the mentee's problem is one she will ultimately have to solve so that help will have to come from somebody who has the professional knowledge to help." Once the line is crossed from mentoring into personal affairs, the professional relationship can suffer as well and become very difficult. It doesn't mean mentors can't be friendly and helpful, but both mentor and mentee have to respect each other's private lives, she adds.

While mentors who specialize in a mentee's field of study are ideal, Sedransk recommended that students also find a mentor outside of their department to broaden their perspective. Dr. Wang said that with this idea in mind, she asked the Associate Dean of Research at UC to be her mentor. "We had monthly meetings for my entire first year, which was very helpful with my transition to becoming a junior faculty member."



Building upon the discussion, Mo said that in addition to building new relationships with mentors, maintaining an ongoing rapport is equally important. For example, she continues to learn from a previous advisor by collaborating to publish new research. "We send manuscripts back and forth for revisions and tailored them for different journals," she added.

Concluding the panel discussion, Sedransk, Mo, Wang, and He emphasized on the need for mentors to be supportive and direct and to maintain an ongoing professional relationship with mentees. By actively communicating their expectations, mentees and mentors can set mutual expectations and identify the appropriate routes to reach goals efficiently.



The 2017 Women in Statistics and Data Science (WSDS) conference will be held in La Jolla, California, from Oct 19-21, 2017. The theme for 2017 will be "Share WISDOM (Women In Statistics, Data science, and -OMics)." Dalene Stangl, Professor of the Practice Statistical Science at Duke University, is on ASA's WSDS Program Committee and played a key role in launching the first WSDS conference in 2014. She said, "We seek to create a different force and space in our culture. A place where women can learn and understand our needs can start to reshape our own value and to assert ourselves more fully. We need to start by claiming our right to do so. This is why we created Celebrating Women in Statistics and Data Science. So that we have a place to learn, understand, and voice what we value whether it agrees with or goes against a mainstream work culture."

She added, "In the past, there were more men pursuing postdoctoral degrees in statistics and data science but today more women are pursuing these careers and NISS is determined to tap into the pool of talented women statisticians."

ANNOUNCEMENTS AND HIGHLIGHTS

SRCOS 2017 Summer Research Conference

Event Type: NISS Sponsored
When: Sunday, June 4, 2017
to Wednesday, June 7, 2017
Where: Villas by the Sea,
Jekyll Island, GA

International Total Sur- vey Error Workshop 2017

When: Monday, June 12, 2017
to Wednesday, June 14, 2017
Where: Regensburger Strasse
104, Room 168, Nürnberg,
Germany, 90478

2017 – WNAR Meeting

When: Sunday, June 25, 2017,
to Wednesday, June 28, 2017
Where: Eldorado Hotel and
Spa, Sante Fe, New Mexico

Check out our Events Calen-
dar here: <https://www.niss.org/events/calendar>

Write to us at communications@niss.org

OUR MISSION

The National Institute of Statistical Sciences (NISS) is an independent research organization that serves as a neutral, objective expert in delivering research in science and public policy to its affiliates in academia, industry and government. NISS identifies, catalyzes and fosters high-impact cross-disciplinary and cross-sector research involving the statistical sciences.



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