NISS

Parameters

FALL | 2021

IN THIS NEWSLETTER...
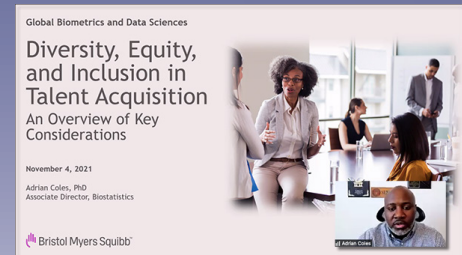
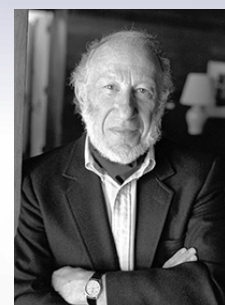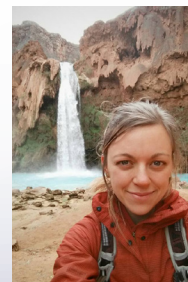*LEARN*

Page 2

MEETUPS

Page 3

EVENTS

Page 4

Page 4

CONNECT

Page 5

RESEARCH

Page 2

Welcome to the Fall 2021 NISS Parameters Newsletter!

Greetings from the National Institute of Statistical Sciences (NISS)

As the COVID-19 pandemic continues to create disruptions in our society, NISS looks forward to remaining adaptable and creating new activities. Hopefully, more of these will be in-person, although we have learned the advantages of holding virtual events and meetings.

The NISS board of trustees meets the first Friday of November (this year again via Zoom) and reviewed the many NISS activities which are described in the Annual Report (niss.org/annual-reports). The 2020-21 report describes the many outreach activities that NISS hosts and provides insight into the research activities that NISS provides for the government agencies, primarily in agriculture and education through NASS and NCES. The year-end financial report and audit showed a positive balance with margin, and the board approved the budget for the current year. The board also received a report from the search committee for a new director and CEO, including plans for second interviews for the short list of candidates. I'm looking forward to handing the reins to new leadership.

The NISS affiliates committee provides a creative source of ideas for the cross-sector activities that NISS hosts for the benefit of our affiliate members and the broader statistical and data science community. Highlights during the past few months include the recent NISS/Merck Meetup on Diversity, Equity and Inclusion (DEI) in the pharmaceutical industry. Leaders from three companies described their initiatives and successes, demonstrating the benefits that are derived from a commitment to incorporate diversity throughout the organization. Ever popular with our affiliate members, we hosted three virtual career fairs this fall, focusing on different sectors, academic faculty jobs, positions in the consumer products industry P&G and big pharmaceutical companies Lilly and Merck, and most recently the hi-tech industry with speakers from Google, Netflix and Facebook (now Meta), companies that a growing number of statisticians and data scientists are attracted to. Upcoming in December is a career fair focused on government positions. These events provide insider perspectives and advice on how to succeed in these work environments and strategies for getting an offer.

NISS hosted the virtual ITSEW 2021, which was originally planned for 2020 in Manchester England, but was cancelled due to the pandemic. The international total survey error workshops (ITSEW) have been co-sponsored by NISS since 2005 (https://www.niss.org/event-series) and demonstrate an important area that NISS supports.

Another source of NISS activities have come from the Ingram Olkin Forum committee. Recent events have been virtual, but the inaugural Gun Violence workshop is the model of what we hope are future events. See the summary below in the Newsletter and look for a call for proposals soon for additional workshops. The recent series of workshops on Unplanned Clinical Trial Disruptions have spawned several working groups preparing articles to describe areas needing additional methodological research.

We invite our affiliates to nominate additional early career faculty liaisons to NISS, especially females, to become active in planning and moderating NISS events. We are also pleased to see the growing Graduate Student Network (GSN) activities and anticipate naming graduate student liaisons from each of our academic affiliates to participate and begin to build their network of colleagues which are important for enriching their careers. We also thank P&G for sponsoring the second Graduate Student Research Conference upcoming in the Spring.

Enjoy the articles in this Newsletter which elaborate on our recent activities and announce upcoming events. If you have ideas for new activities and would like to become an affiliate, please be in touch with me.

Jim Rosenberger, Director, NISS

ABOUT NISS

The National Institute of Statistical Sciences (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.

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 and data sciences.

Wednesday, December 8, 2021, 12-1:30 pm ET

Government institutions have a unique mission when it comes to the data they collect as well as the importance of the research they engage in. This research becomes the principle foundation for informing policy issues that impact all aspects of society.

What is it like to work as a statistician in a government agency? What kinds of opportunities are there for data scientists in the federal government? More importantly, how do you prepare yourself for obtaining a position?

Once again, NISS has gathered an incredible trio of speakers. Not only do they bring extensive experience working in the federal government, but these individuals have as their priority a willingness to share their experiences so that others may better understand and be better prepared for working for a federal agency.

This event is free and open to all!

Register for this Event Today!

Speakers

Jeffrey Gonzalez, (USDA Economic Research Service)
Patricia S. Hu, (Bureau of Transportation Statistics)
Rachel E. Morgan, (Bureau of Justice Statistics)

USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

U.S. Department of Transportation

BJS Bureau of Justice Statistics

RECENT EVENTS

Diversity and Inclusion the Focus of NISS/ Merck Meet-up

Beginning in 2017, the NISS/Merck meet-ups have focused on a wide variety of important topics of interest to the statistics community in the pharmaceutical industry. The main person behind the organization and implementation of these events has been **Dan Holder** (Merck). While this session did not involve any specific technical statistical approaches or unique research methodologies, the speakers demonstrated how this topic is just as important to the overall innovativeness and performance in the industry.

"It is not about just numbers. It is about how do you create an environment where your company or organization will reach its potential in terms of impact."
Brian Millen (Eli Lilly)

All three speakers shared their valuable experience and insights. Many suggestions and practical advice was given. Everyone will benefit from a review of the recording of this session and the slides used by the speakers which can be viewed on the NISS website.
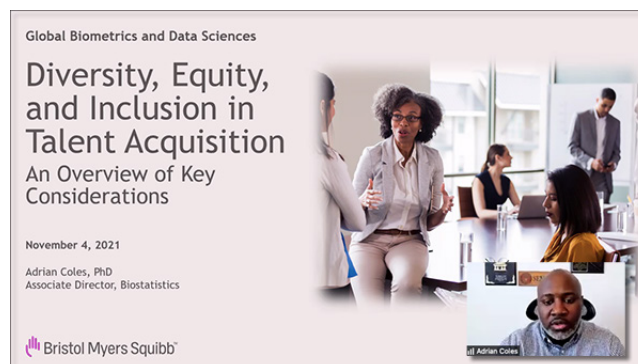
Read more about this event...

The speakers for this session were **Dr. Adrian Coles**, Associate Director of Biostatistics at Bristol Myers Squibb, **Dr. Brian A. Millen**, Senior Director of Real World and Access Analytics within Lilly's Global Statistical Sciences (GSS) organization and **Dr. Paulette Ceesay**, Principal Scientist in the neuroscience and ophthalmology therapeutic areas at Merck. The session was moderated by **Junshui Ma**, Senior Director at Merck.

Global Biometrics and Data Sciences

Diversity, Equity, and Inclusion in Talent Acquisition

An Overview of Key Considerations

November 4, 2021

Adrian Coles, PhD
Associate Director, Biostatistics

Bristol Myers Squibb

NISS Affiliates - As you plan your next event, make sure you consider NISS Co-Sponsorship!
The sooner you decide, the sooner NISS can start advertising for you!

Grant Proposals: A Webinar Full of Advice, Suggestions and Tips!

Securing grants has become an integral part of research and in some cases career advancement. So, how does one prepare a successful grant proposal? This was the topic of an online webinar organized and presented by the NISS Academic Affiliates Committee bringing together four accomplished senior statisticians who have extensive experience in both writing and reviewing grant proposals.

The speakers included **Huixia (Judy) Wang** who is the National Science Foundation DMS Statistics Program Director and at George Washington University, **Steven Kern** from the Gates Foundation, **Joshua M. Tebbs** Professor and Department Chair at the University of South Carolina, who has served at the BMRD study section of National Institutes for Health (NIH) and received several external grants, and **Ali Shojaie** from the University of Washington who has

been successful in securing multiple sole-PI and collaborative grants, and has served on a number of proposal review panels for NSF and NIH.

"No matter how hard you try, there's going to be some unknowns and some stochasticity involved. I've been successful a couple of times over the past couple years, but I was unsuccessful many, many times before that."
Ali Shojaie (University of Washington)

Sumanta Basu (Cornell) moderated the question and answer session, both live and through the Q&A tool that followed.

Read more about this event...

Hi-Tech Industries Google, Facebook and Netflix Featured at NISS Career Fair

NISS continues to reach out to its Affiliates and other contacts to provide insightful and valued sessions aimed at supporting individuals ready to take big steps along their career paths. Some of these career development sessions have focused on academic positions, others on positions in government agencies and various industries. This session provided an in-depth and personalized look into the opportunities for statisticians/data scientists from three hi-tech companies. Senior statisticians from Facebook, Netflix, and Google described the types of the research that statisticians in these companies get involved in and career opportunities that are available to consider!

Over 350 attendees heard from the speakers of this session. The speakers were **Amir Najmi**, a Principal Data Scientist at Google, **Martin Tingley**, head of the Experimentation Platform Analysis Team at Netflix, and **Elliott Merriam**, a Research Data Scientist at Facebook (Meta). The session was moderated by **Piaomu Liu** (Bentley University).

"Think of communication as a two-way skill. It is not simply you saying stuff. It is also you listening to see if they understood!"
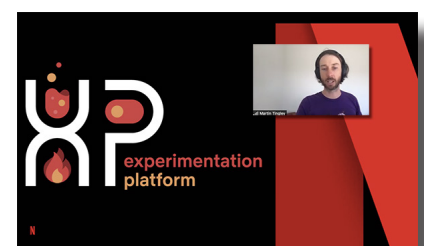
Amir Najmi (Google)

"I think one thing that is underappreciated is the importance of soft skills. It is really, really difficult to be successful in industry, in my experience, no matter how technically competent you are if you are not able to communicate and partner with people effectively. This puts a really, really low ceiling on how far you can get."

Elliot Merriam
(Facebook/Meta)

Keep an eye open for the next virtual career fair! NISS career fairs highlight opportunities for statisticians working in all types of different sectors in academia, industry and throughout government. These online sessions are free! Plus, you get to hear from experienced professionals who can give you an inside look into an area you may be interested in! Be sure to register early!

Read more about this event...

Information and Insights on Internships in Industry for Graduate Students

The NISS Graduate Student Network and the NISS Academic Affiliates co-hosted a special 2-hour event that focused on internship opportunities for graduate students. Panelists were brought together from a variety of companies that have a history of implementing statistics and/or data science internship programs. Speakers were able to not only describe the internship opportunities their company currently offers but were also to share more generally with the 150+ attendees about the preparation, requirements and qualifications for these types of opportunities.

The panelists involved in this session included Jonathan Legare (Fidelity), Rob Baker and Qing Ji (Procter & Gamble), John Palcza (Merck), Sneha Chatterjee and Jan Vlachy (Google) and BriAnna Walker, (Research Triangle Institute - RTI).

"Fidelity invests a lot into its internship program. Every year Fidelity hires roughly 1,000 summer interns. The primary goal for us at Fidelity, with all of these interns, is to convert them into full-time employees."

Jonathan Legare (Fidelity)

"If you are asked a technical question about how to solve a particular problem, instead of jumping into a specific methodology, talk through an example. … Don't just drop a bunch of names of R or Python packages. Expand on why that particular package or method is applicable to the problem you are trying to solve. If you speak through the pros and cons it gives the interviewer a good idea as to whether that person really knows about this method and can execute and apply it to a real-world problem."

Sneha Chatterjee (Google)

"Many of you may be thinking about a career in the pharmaceutical industry and what better way to get an idea as at what a day in the life of an industry statistician is like than to have three month's worth of experience and to really understand what industry statisticians do. "

John Palcza (Merck)

Read more about this event...

NISS Board of Trustees - Annual Report

Throughout year the NISS Board of Trustees meets to monitor, direct and support the efforts of NISS research and outreach. Board members work to develop strategic objectives to help steer the organization's efforts. All of this activity is shared with NISS Affiliates through the Annual Reports published on the NISS website each year.

Review the 2020-2021 Annual Report

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NISS HIGHLIGHT: MEET NEW RESEARCH ASSOCIATE HALEY JEPPSON!

Haley Jeppson is a new NISS Research Associate. Haley just started work on data from the National Center for Education Statistics (NCES). She is working on a project with her advisor at Iowa State, Dr. Heike Hofmann, on the graphical representation of education statistics for national data collected by NCES.

Why Statistics? Why Data?

"My interest in statistics stems from their ubiquitous nature and my interest in exploring many different fields. The challenge is that there are massive amounts of interesting data available, but it is sometimes very difficult to get ahold of it."

"I would describe my path up to this point as a bit of a meander as I have enjoyed many different hats. It was only in grad school that I found a way to link many of my interests. With statistics and, in particular, statistical graphics, I could harmonize my academic background in mathematics and graphic design, applying one side to investigate and describe phenomena and the other to better communicate the findings."

When asked what it has been like working on a NISS project, she replied, *"It's been a whirlwind so far, but I am happy to be here!"* Haley describes herself as a hobby enthusiast.

In her spare time Haley enjoys gardening, crafting, reading, and spending time in nature with her husband Jules and dog Otis.

We look forward to working with and learning more about Haley and are excited about the energy and contributions that she will bring to the research challenges put into her path!

Welcome to the NISS family Haley!

Ingram Olkin Forums (IOFs) were established in 2018 to honor the memory of **Ingram Olkin** (July 23, 1924 – April 28, 2016), recognizing that Ingram had a passion for both the field of statistics and its impact and believing

- Statistics are beautiful – both theory and applications;

- Statistics are powerful; they can be used for good;

- Statistics make unique, center-stage contributions in service to society and making such contributions more widely recognized will invigorate the statistics field;

- Cross-disciplinary research is a fuel that can thrust Statistical Science forward.

IOFs, with the tag *"Statistics Serving Society"*, focus on current societal issues that might benefit from new or renewed attention from the statistical community.
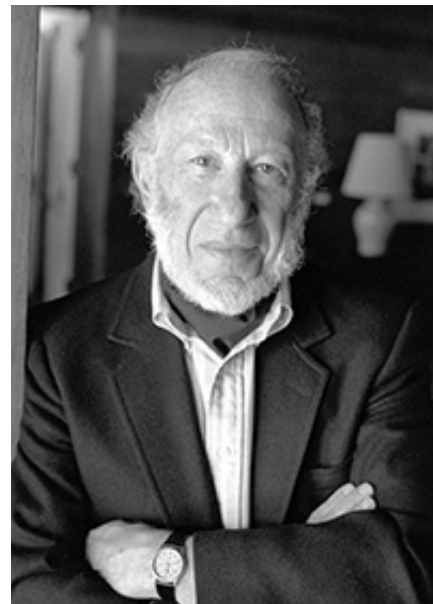
Major goals for the IOFs are promoting participant interaction, the development of new research agendas and the building of follow-on working teams. The inaugural IOF workshop was in June 2019 on the *Statistics of Gun Violence* was an exciting demonstration that the Forum model could advance these goals. A paper emanating from this workshop is now in press.

The Committee anticipated conducting one in-person forum per year. Then came COVID. The second planned IOF was to be on the Opioid Crises. But it was postponed, thinking all would be well soon. In the meantime, we took up the challenge of having IOFs online. IOFs were not intended to be another webinar series. Could we really – online - get researchers and practitioners who were strangers from different fields to define new research topics and coalesce into working groups around then? IOFs on *Police Use of Force, Unplanned Clinical Trial Disruptions, Algorithmic Fairness and Social Justice, Covid and the Schools: Modeling Openings, Closings and Learning Loss* are operational with multiple manuscripts from different groups in preparation.

Having established *proof of concept*, ongoing NISS will accept IOF proposals kicking off with online, in-person, and hybrid Forum formats. Watch for details in the January 2022 newsletter.

Fulfilling the Vision of The 1988 Cross-Disciplinary Report (Ingram Olkin and Jerome Sacks, co-chairs) that called for the establishment of an Institute of Statistical Sciences to

a) Identify important societal problems;

b) Form research teams to attack these problems;

c) Establish post-doctoral and sabbatical programs and fellowships;

d) Organize workshops for science reporters, congressional staff, and other public groups; and

e) Stimulate curricular improvement – in particular it should concern itself with statistics education issues that are important to the future of statistical science and its applications.

S³ | Statistics Serving Society

2021 NISS Committee on Ingram Olkin Forms

David L. Banks
Betsy Becker
Michael Brundage
Nancy Flournoy (Chair)
Claire Kelling
Jim Rosenberger
Jerry Sacks
Christopher Schmid
Lingzhou Xue
Megan Glenn (Sec.)

If you are interested in serving on the IOF oversight and proposal review committee, contact NISS Director Jim Rosenberger at JLR@psu.edu and/or Nancy Committee Chair Flournoy at flournoyn@missouri.edu.

Ingram Olkin Forums 2019-2021

Gun Violence - The Statistical Issues (June 26-27, 2019)

COVID and the Schools: Modeling Openings, Closings, and Learning Loss (December 16, 2020)

Unplanned Clinical Trial Disruptions:

- NIH Perspectives (July 21, 2020)

- CDC, FDA and EMA Perspectives (July 28, 2020)

- Estimands and Missing Data (September 1, 2020)

- Randomization Tests (September 15, 2020)

- Coping with Information Loss and the Use of Auxiliary Sources of Data (March 23, 2021)

- Bayesian and frequentist approaches to rescuing disrupted trials (April 27, 2021)

Algorithmic Fairness and Social Justice (September 25, 2020)

Police Use of Force (June 4, 2021)

The Opioid Crisis (Postponed)

NOVEMBER

Webinar on Mathematical Foundations of Data Science

Event Date: November 19, 2021
Speaker: Vasilis Syrgkanis, (Microsoft Research)

DECEMBER

Webinar on Mathematical Foundations of Data Science

Event Date: December 3, 2021
Speaker: Lars Peter Hansen, (University of Chicago)

Government Agency Career Fair - Fall 2021

Event Date: Wednesday, December 8, 2021, 12-1:30 pm ET
Event Type: Online Webinar

Government institutions have a unique mission when it comes to the data they collect as well as the importance of the research they engage in. This research becomes the principle foundation for informing policy issues that impact all aspects of society. What is it like to work as a statistician... (read more)

Webinar on Mathematical Foundations of Data Science

Event Date: December 10, 2021
Speaker: Jose Blanchet, (Stanford University)

APRIL

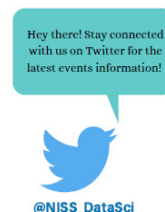## 14th Annual Conference on Statistical Issues in Clinical Trials: Subgroup Analysis

Event Date: April 12, 2022, 8:30 AM to 4:30 PM ET
Event Type: Conference

Conference Theme Subgroup Analysis Save the Date! Registration will open beginning in January, 2022! ... (read more)

Check the NISS Events webpage for up to date event info!

Become a Sponsor of NISS Hosted Events!

NISS Invites corporations, institutions and individuals to sponsor events that are hosted by NISS. Sponsorship helps to defray the cost of organizing events and is a great way to give your organization visibility that targets statisticians and other related professions who attend NISS events! *Learn More!*

Hey there! Stay connected with us on Twitter for the latest events information!

Linked in

@NISS_DataSci

Do you know that NISS is also active on Linkedin?

NISS | National Institute of Statistical Sciences

CAREER OPPORTUNITIES AT NISS

NISS Seeking Next Director

The National Institute of Statistical Sciences (NISS) seeks a talented statistical/data scientist to serve as its Director and Chief Executive Officer (CEO). In 2020, NISS celebrated its 30th anniversary with a renewed focus on its mission to identify, catalyze and foster high-impact research and to offer exceptional opportunities for training to promote and advance the statistical and data sciences in the United States. The NISS legal corporate home is in North Carolina; its scientific and professional activities currently are centered at hubs at Penn State University, and Washington, DC, with future locations anticipated.

NISS delivers research on critical issues in science and in public policy by leveraging the rich expertise of its staff with that of its 48 affiliated organizations in academia, industry, and government. The hallmark of a NISS project is the high level of expertise that leads to relevant and implementable solutions. NISS achieves high-quality results by pairing experienced senior leadership with teams of talented (post-PhD) junior researchers and technical staff. Current activities include research contracts with the Departments of Agriculture and Education as described on the NISS website: www. niss.org.

NISS also serves as a national thought leader and catalyst, hosting conferences and workshops for the statistical science community. NISS annually convenes conferences on topics of high current interest, e.g., the COVID Data Science webinar series

presented in 2020-21. In addition, small "think tank" working sessions are convened so problem-holders in a science or public policy community can bring their pressing issues and challenging problems to select experienced statistics researchers. The goal of these workshops is to articulate the needs of the community and to explore potential technical statistical solutions. NISS additionally sponsors series of workshops such as the International Total Survey Error Workshop (ITSEW), which it co-founded to meet the need for survey methodology.

NISS seeks a Director to expand its focus, retaining and growing its active hubs and increasing its engagement with the broader statistical community. The Director of NISS is responsible for every aspect of the Institute's vision and operation, including:

- Serve as NISS' most articulate and persuasive advocate.
- Envision, develop, and execute the scientific programs of NISS.
- Ensure continued independence, unassailable quality, and the relevance and timeliness of the NISS research portfolio.
- Recruit, nurture, and strengthen community engagement in support of NISS.
- Develop new sources of funding with grants and contracts.
- Safeguard the fiscal health of NISS while maintaining the strength of the NISS Affiliates Programs.

See the Job Announcement on the NISS website for all details,

NISS CONTINUES TO WORK TO IDENTIFY TOPICS OF INTEREST TO STATISTICIANS FROM ALL DIFFERENT SECTORS AND THEN GATHER EXPERTS TO CONTRIBUTE TO A CONVERSATION THAT HELPS TO NOT ONLY INFORM BUT ALSO PROVOKE FURTHER THINKING ON THESE TOPICS. KEEP YOUR EYE ON THE NISS WEBSITE FOR FUTURE EVENTS THAT MIGHT BE OF INTEREST TO YOU OR YOUR COLLEAGUES!

NISS