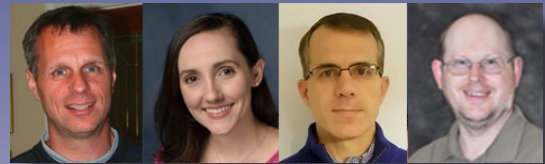
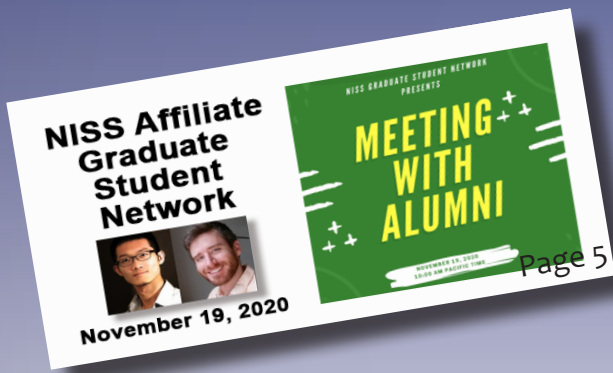


Parameters

FALL | 2020

IN THIS NEWSLETTER...



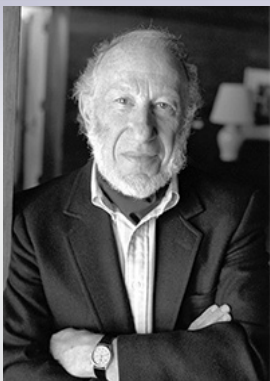
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MEETUPS



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CONNECT



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RESEARCH

Essential
Data Science for
Business

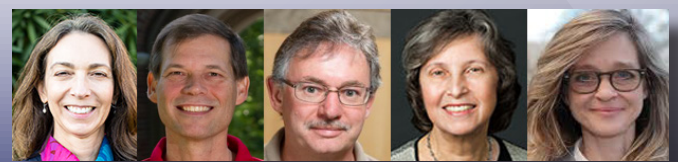


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LEARN



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Page 4



Welcome to the Fall 2020 NISS Parameters Newsletter!

As reflected on this Newsletter cover, NISS continues with numerous activities. Despite the ongoing Covid-19 pandemic and restrictions on travel, we have increased the number of webinars, meetups and forums that NISS offers to our affiliates and to the profession at large.

After an overview of Essential Data Science for Business, by Victor Lo, we launched a series of tutorials on the top ten data science tools that statisticians need to understand. The Ingram Olkin Forums designed for *Statistics Serving Society* have continued with the series of virtual workshops on Unplanned Clinical Trial Disruptions. A new forum was launched on Algorithm Fairness and Social Justice in September with a follow-up planned on AI uses in banking and lending settings. An upcoming forum in December will examine the decision-making policies behind the opening and closing of schools, and the impact of these decisions on learning. In the Spring, we will examine the consequences of the Opioid Crisis coupled with the pandemic, which like gun violence, has been exacerbated by the pandemic.

A new COPSS-NISS COVID-19 Data Science Virtual Seminar Series will begin in December, and feature speakers on the front lines as our nation attempts to contain the pandemic. With two seminars per month, we will follow the scientific developments of the pandemic and efforts to contain it. The Penn State hub of NISS will host these seminars on Zoom with assistance from Glenn Johnson, and Associate Director Lingzhou Xue, who serves on the organizing committee with NISS board member Karen Bandeen Roche. In January the pandemic will also be featured in the NISS-Merck Virtual Meet-up on SARS-COV2 Vaccine Development.

Upcoming professional development events targeting our affiliate members, include virtual career fairs, which address the unique circumstances this year has created. Future career fairs will feature government and industry positions. If your department is not already a NISS affiliate, please reach out to me, or Lingzhou Xue, and encourage your department to join. NISS sponsored and hosted events encourage cross-sector and cross-disciplinary networking. More information about the NISS Affiliate program is on the [NISS website](#).

Please stay well and safe during these days of transition.

Jim Rosenberger, Director, NISS

Even though located at the hub of national events and local demonstrations, NISS-DC is actually thriving. Operations now integrate work from onsite offices (with careful distancing) and remote environments.

New Personnel: NISS-DC is expanding with new staff. **Brian Habing** from University of South Carolina has joined NISS (part-time) as Associate Director for Education Activities and Research (see page 6). **Alexi Albert** has joined NISS (part-time until she receives her Master's in Data Science in May 2021) as Research Assistant on NCES projects. **Megan Glenn** moved from temporary to essentially full-time regular appointment. **Lynne Stokes** from SMU, as a NISS Senior Research Fellow, is taking over responsibility for one of the NCES panels.

Significance – statistical and otherwise: NISS-IES White Paper on Significance and Non-Significance is now publicly available on the NISS website together with a companion panel report on Citing Significance. Much has been written about statistical significance from the point of view of Biostatistics. However, for social and education science research the role of statistical significance and hypothesis testing differs in some important ways leading to different challenges for accurate reporting. The White Paper examines the notion of significance from a social/education science perspective and the relationship between significance and importance. The report of the second panel elaborates and provides some recommendations for communicating research results. (see page 7)

Contest in Visualization: On the theory that substance plus statistics equals knowledge, Statistically Accurate Interactive Display (SAID) in Graphics will pair students from social/education science with data science students to create insightful, innovative graphics using education data. (see page 5) Students will start from a publication on national education data, and, given an excerpt from a related data set, use their creativity to innovative graphics that go both above and beyond conventional graphics in the publication. NISS will award prizes (\$\$) for the winning team, for a winning individual, and for whoever produces a “Simply Glorious” graphic even if it is unlikely to be a prototype for wide adoption.

Everyone at NISS-DC is committed to staying safe and well – and wishes the same to all the NISS family.

Nell Sedransk, Director - DC

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.



FEATURED EVENT SERIES: ESSENTIAL DATA SCIENCE TUTORIALS CONTINUE THROUGH FALL AND BEYOND!

NISS

Essential Data Science for Business



NISS has inaugurated an exciting new series of tutorials on some of the most interesting topics in data science that are in use in business today!

Students and faculty, these are perhaps the top ten most important and practical topics that may not be covered in your program of study!

The first overview session was presented by Victor Lo of Fidelity Investments ([review the recording of this session](#)).

Since then, the first three tutorials have already taken place. These sessions included “[Data Science Workflows](#)” with Jim Harner, “[Descriptive Analytics, Exploratory Data Analysis, and Data Visualization](#)” with Lee Wilkinson and “[Predictive Analytics and Machine Learning](#)” with Yanling Zuo.

Missed these sessions? No worries, you can still receive the link to the recording by visiting the past event page on the NISS website.

There are only two more tutorial sessions scheduled for this Fall. Registration is available for:

November 18, 2020 - Victor Lo & Dominique / Jonathan Haughton: “Causal Inference and Uplift Modeling”, and

December 2, 2020 - Ming Li: “Deep Learning”

In the new year these tutorials will pick right up where they left off. Here are the sessions that are being scheduled beginning in January of 2021.

Winter 2021: “Prescriptive Analytics and Optimization”

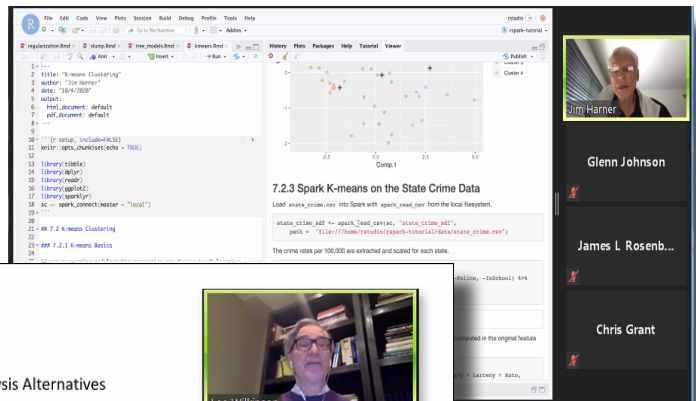
Winter 2021: “Unstructured Data Analysis”

Winter 2021: “Social Sciences and Data Science Ethics”

Winter 2021: “Domain Knowledge and Case Studies”

Winter 2021 - Sam Woolford: “Analytical Consulting, Communication and Soft Skills”

Check the [NISS Events webpage](#) for up to date event info!



4. Classification and Regression Trees...

4.4 Model Evaluation

Three Commonly Used Metrics

- Average Negative Loglikelihood
- Area under ROC curve (from 0.5 to 1.0)
- Misclassification Rate

Model Summary

Statistics	Training	Test
Total predictors	13	
Important predictors	13	
Number of terminal nodes	6	
Minimum terminal node size	17	

ROC Curve for Model Comparison

Receiver Operating Characteristic (ROC) Curve

Area Under Curve: Training = 0.8162, Test = 0.6202

NISS National Institute of Statistical Science

From left to right: Yanling Zuo (Minitab LLC), Lee Wilkinson (H2O, and University of Illinois at Chicago) and Jim Harner (Professor Emeritus of Statistics at West Virginia University) present as part of the top ten Data Science Essentials for Business tutorial series for NISS.

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 AND 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!

CAREER FAIRS FOCUS ON CHALLENGES FINDING A POSITION DURING THE PANDEMIC

NISS

During the Fall and Spring of 2019 and 2020 NISS hosted 8 different career fairs, each gathering experienced senior statisticians and each featuring positions either in academia, industry or government. We thought we might have tapped out on sharing understandings into the nuances of the job market and gathering advice for securing a position. Then in March of 2020 everything changed. As a result, NISS reached out to find ways to support job seekers from our affiliate institutions by asking the department heads of three universities to share not just their advice for how to approach applying for an academic position, but how this process has changed under current circumstances and their insights for those on the job market as a result.

On **November 11, 2020** three department heads, **Kate Calder** from the Department of Statistics & Data Sciences (SDS) at the University of Texas at Austin, **Abel Rodriguez** from the Department of Statistics at the University of Washington and **Jiayang Sun** from the Department of Statistics, George Mason University graciously shared advice and insights regarding academic job seeking for statisticians.

Kate Calder's advice was to apply for positions and don't give up! Kate described the three positions that her department is seeking to fill: one tenured, one tenure-track, and one open rank. She also shared that UT Austin expects to be hiring at both the junior and senior levels for the next few years! That has got to be good news. But perhaps her most valuable comments were her general advice when applying for a position. While some of these may be obvious, i.e., "be prepared", "ask questions", "your job talk is important", etc. to hear this from someone who will be directing search committees indicates just how important these suggestions are.

"I'm hopeful that the long-term impacts of the pandemic on the academic market in statistics will be minimal." (Kate Calder)

Abel Rodriguez provided a detailed description of the hiring



Moderator: Lingzhou Xue (Penn State) Speakers: Kate Calder (University of Texas, Austin), Abel Rodriguez (University of Washington) and Jiayang Sun (George Mason University).

process his department has in place. First, Abel made it clear that what matters in a tenure track application has not changed due to COVID-19. What has changed, however, is the process. Traditionally hiring was a two-round process which included a first round with short Zoom interviews that lead to campus visits for a selected set. Abel explained that it is now a three-round process. A first round of short Zoom interviews, which leads to half-day interviews that include a one-hour talk, followed by additional half-day third-round interviews.

Jiayang Sun gave a detailed explanation of the qualifications that are preferred for tenure track faculty and shared that her department has worked out the details of a hiring process at GMU that will be 100% online. In brief, department faculty will first conduct screening interviews. This will be followed by a formal interview which then will lead to a decision and possible job offer. Jiayang's advice for candidates was straightforward; apply early, be yourself, be honest and be prepared! However, she also added that the ability to show yourself and interact well online is essential.

[NISS Affiliates - Exclusive Link to Recording of this Event!](#)

UPCOMING EVENT: NISS-MERCK VIRTUAL MEET-UP ON SARS-COV-2 VACCINE DEVELOPMENT

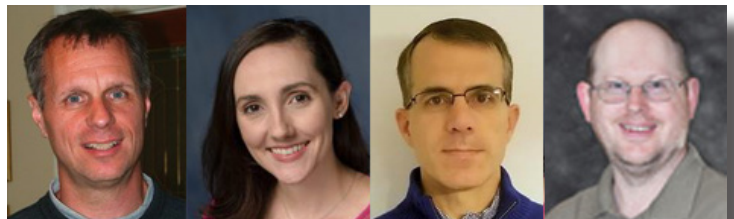
January 13, 2020 11-12:45 ET

The National Institute of Statistical Science (NISS) and Merck are sponsoring a [Virtual Meet-Up on SARS-COV-2 Vaccine Development](#).

With the COVID pandemic having such a profound effect, everyone is hoping for a vaccine soon. At our last meet-up we examined how vaccines are developed with some emphasis on the current pandemic (NISS-Merck_meet-up_Vaccine_Development). In this meet-up we will dig a little deeper into study design for vaccines to SARS-COV-2 considering general efficacy trial design and some thoughts for measuring response. We will also examine some of the largest current studies to look at how some of these considerations play out in practice.

Check the [NISS Events webpage](#) for up to date event info!

Speakers for this event are: **Natalie Dean** (University of Florida), **Jonathan Hartzel** (Merck) and **Kert Viele** (Berry Consultants).



Moderator: Dan Holder (Merck) Speakers: (left to right) Natalie Dean (University of Florida), Jonathan Hartzel (Merck) and Kurt Viele (Berry Consultants).

[Register for this Event Here!](#)

UPCOMING EVENT: NISS ACADEMIC AFFILIATE MEETUP: HOW TO PRESENT YOUR RESEARCH

NISS

November 30, 2020 1:30-3pm ET

The NISS Academic Affiliate Committee is holding a virtual meet-up on November 30, from 1:30-3pm ET, on “How to Present Your Research”.

Presenting technical research clearly in front of a large audience is an essential and extremely valuable skill set for a statistician. Whether you are applying for a position in academia or industry, or presenting your work at a conference or client meeting, it is important to ensure that we connect with our audience and effectively communicate the key ideas.

What are the things to keep in mind before presenting your research to a large audience? Should you change your presentation style when you are speaking to statisticians or non-statisticians? Is there a correct balance between highlighting the broader impacts and the technical innovations of our work?

Our panel of four statisticians with expertise in communicating statistical ideas to diverse audiences will share their insights in this webinar. They will draw on their prior experiences and discuss good practices and tips when presenting to technical and non-technical audiences.

[*NISS Affiliates - Register for this Event Here!*](#)



The four distinguished and very exciting panelists that will present short comments on this topic include:

John Bailer (University Distinguished Professor and Chair, Department of Statistics, Miami University)

James Booth (Professor and Director of Graduate Studies, Department of Statistics and Data Science, Cornell University)

Susan Ellenberg (Professor of Biostatistics, Medical Ethics and Health Policy and Interim Chair, Department of Biostatistics, Epidemiology and Informatics, University of Pennsylvania Perelman School of Medicine)

Regina Nuzzo (Senior Advisor for Statistics Communication and Media Innovation, American Statistical Association)

Moderator: Kate Crespi (Professor of Biostatistics, University of California Los Angeles)

Each panelist will present for about 15 minutes, focusing on presentation tips for statisticians when they are giving talks to non-statistics and statistics audiences. Then we will open the floor for discussion and questions from attendees!

UPCOMING EVENT: FINDING A JOB DURING THE PANDEMIC, PART 2!

The earlier Career Fair was so valuable we decided to host another session so that we all could hear from more departments!

December 9, 2020 12 - 1:30pm ET

On November 11th NISS hosted an informative Career Fair that featured speakers that spoke about the open positions they are currently seeking to fill. We also asked them to comment on the changes to the hiring process they have put into place amid all of the changes in life since the COVID-19 and the advice they would give anyone on the job market at this time.

Here is an article that speak about changes to the hiring process. Nature recently published an article titled “Junior researchers hit by coronavirus-triggered hiring freezes” in June, 2020.

The questions are numerous but center around, “How do you pursue a career as a statistician at an academic institution given the travel and social distancing restrictions of the pandemic? How is it possible to navigate these obstacles?” This is certainly a concern for those ready to graduate or already on the job market. In fact, The New England Future Faculty Workshop hosted a virtual panel discussion on “Navigating the Academic Job Market during the COVID-19 Pandemic” in August.

To comment on these issues and talk about applying for an academic position in today’s hiring climate, NISS has invited representatives from three academic institutions.



Moderator: Jessica Li (UCLA). **Speakers: Irina Gaynanova** and **Brani Vidakovic** (Texas A&M University), **Robert Krafty** (Emory University), **Martin Wells** (Cornell University)

The speakers for this event include:

Irina Gaynanova, Hiring Committee Member and Assistant Professor and **Brani Vidakovic** Department Head and H.O. Hartley Professor both from the Department of Statistics, Texas A&M University.

Robert Krafty, Department Chair and Professor, Department of Biostatistics & Bioinformatics, Rollins School of Public Health, Emory University.

Martin Wells, Department Chair and Charles A. Alexander Professor of Statistical Sciences, Department of Statistics and Data Science, Cornell University.

This session will be moderated by **Jessica Li** (Associate Professor, Department of Statistics, University of California, Los Angeles)

[*NISS Affiliates - Register for this Event Here!*](#)

NISS SAID in Graphics

What?

NISS is sponsoring a student data visualization contest - for creating examples of how interactive data visualization techniques can be applied to enhance the data presentations in several public reports about education.

Simply put, NISS is looking for *Statistically Accurate Interactive Display in Graphics*-- SAID in Graphics!

Who?

1. The **cross-disciplinary team competition** is open to groups of two to six students enrolled in two or three different departments, including at least one education or social science department and at least one data science department in the US or Canada.
2. The **individual competition** is open to anyone enrolled as a graduate student in a US or Canadian education or social science program or a data science program,

When?

Register by **December 21st** to get your data set and get started!

Final submission deadline is January 6, 2021.

Prizes?

Winning team: \$1500, shared equally across the two or three co-leaders' departments. Individual: \$250 for their department. Or, the "Simply Glorious" prize of \$250 that will be awarded at the discretion of the judges to the winner's department.

Time to - Think outside of the box!

Winners will also be invited to be part of a NISS presentation on statistical graphics for researchers in other disciplines!

Can you create a graphical presentation that grabs the viewer's attention – even before reading a report? Then this competition is for YOU! Your mission - design an innovative visualization that attracts the reader and expands the information presented in a meaningful way!

[Additional Information, Rules and Registration on the NISS website.](#)

[Get your team together and Register!](#)

DATA COMPETITION!

visualization

NISS GRADUATE STUDENT NETWORK LAUNCHED!

Calling All Graduate Students!

Given the travel restrictions and social distancing that is applied to all things community, NISS is reaching out to all graduate students from NISS Affiliate departments as a means to help correct this imbalance. An executive committee has been meeting since June and has just recently begun holding events. Check the 'Events' page on the NISS Graduate Student Network website for upcoming events. The website also has a discussion board and plans to list various funding opportunities.



I caught up with **Hannah Waddell** a Ph.D. student in Statistics from Emory University who is one of four NISS Affiliate Graduate students serving on the executive committee of this new group with a few questions.

What value you feel this Graduate Student Network can bring to graduate students?

"Graduate school is an overwhelming experience. I've found the advice and support of students in my cohort and the senior students in my program, to be incredibly valuable. Grad school is a unique time, and it makes a huge difference to have other students who can offer advice, geek out with me about statistics, or commiserate. I see this network as an opportunity to build those kinds of relationships nationwide."

Does this new Network have any ideas for where this group might go, the things you plan on or would like to do?

"We've got some really interesting educational activities in the works—from alumni sessions where recent graduates in different industries can talk about job hunting, to discussions about statistical software and workflows. We would like to strike a good balance of social activities and educational activities."

Is there anything that the group needs?

"If any NISS graduate students are particularly interested in a topic/speaker/job/industry, we would love to hear about it—reach out to us and perhaps we could organize an event!"

So, share this exciting news with all of the graduate students in your department and encourage them to take advantage of the opportunities this new network provides. A great way to meet new colleagues, create connections, share experiences and take part in interesting and helpful programs. You should not be tackling the challenges of graduate study alone!

Reach out,
join,
connect!



NISS WRITING WORKSHOP FEATURED IN AMSTAT NEWS!

The National Institute of Statistical Sciences (NISS) has been hosting the Writing Workshop for Early Researchers since 2007!

This year was no different, right? Well, ... yes, and no.

Yes - this workshop was the same valuable experience!

Each year, in conjunction with JSM, NISS gathers a host of senior authors, editors, grant writers/reviewers—individuals who take valuable time out of their day to share their advice and experiences with a group of junior faculty and early researchers. Evidence of the value of this workshop experience can be judged by 1) the number of experienced, senior statisticians, authors and editors that have volunteered years for on end to share their wisdom and advice and 2) the number of session contributors that were once actual participants in the workshop!

No - this workshop was different!

As you know, JSM went virtual this year. So did the writing workshop. This added a different dimension, that in retrospect added some unintended bonuses for participants. First, it meant participants who might not have been able to travel to Philadelphia (even under normal circumstances) were able to participate. For instance, there were several attending the workshop from countries outside the US! And, what also made this workshop a bit different than other larger webinars NISS has hosted lately is that participants in this smaller workshop atmosphere were able to literally ‘raise their hand’ and use their microphone to ask questions

of the speakers live which made for a much more interactive experience.

NISS would like to thank AMSTAT News for sharing the news story about the workshop with its readership.

Writing Workshop in 2021? You bet!

It is never too late to think about who might benefit next from this workshop at JSM 2021. Keep your eye on the NISS website or subscribe to our newsletter for all of the latest information about this and other professional development activities!



[Read the complete story in AMSTAT News!](#)

NISS HIGHLIGHT: MEET NEW ASSOCIATE DIRECTOR BRIAN HABING

Brian Habing recently joined the NISS family as Associate Director for Education Activities and Research. His research focuses on psychometrics and scale construction, with a particular emphasis on multi-dimensional item response theory. He is also interested in statistical education, including work with AP Statistics and the development of new courses at the undergraduate and graduate level.

At the University of South Carolina Brian has served as both the undergraduate and graduate director, and is currently finishing work as director of the department's two distributed learning graduate programs. And, it is clear that students are high on his priority list:

“The highlight of my career so far has to be the 16 Ph.D. students I've directed or co-directed between Statistics and Educational Studies.”

Brian has already begun working with the DC Office of NISS. He will also continue to hold his position as Associate Professor of Statistics at the University of South Carolina.

Why Statistics?

“Out of high school I was leaning towards math or physics, with thoughts of becoming a high school teacher. I quickly realized that I didn't have the patience needed to be a high school teacher but my interest in math never wavered all throughout my academic journey, including my graduate studies. Specializing in psychometrics for my Ph.D. the two main career options were either at a testing company doing a combination of research and operational work, or as a professor involved in research and teaching. I was ecstatic to get an offer from the Statistics Department at University of South Carolina because they really value teaching and were happy to evaluate my research in psychometrics as psychometrics.”

In particular, Brian singles out a specific incident that influenced his current research interests.

“I attended a colloquium on item response theory by Bill Stout and realized I could do both mathematical work and work on real world problems that would impact people in the near future. I was hooked. I jumped to Statistics and have been in it ever since.”



More specifically, as Associate Director for Education Activities and Research, Brian has just begun to become involved in organizing expert panels to work on projects for the National Center for Education Statistics. The challenges of drafting and refining a charge for the group and recruiting expert panel members are two things that Brian is beginning to become familiar with. While there are the direct questions that NCES is interested in pursuing, he also is excited by the wide range of possible research topics outside of these projects that could be tackled using various data bases and expertise at NISS.

Once the things begin to open up, Brian plans to travel up to DC from the Columbia, South Carolina area once a month or so. The unintended consequence is making his 6th grader jealous because DC is at the top of the list of places he'd like to visit! Until then, Brian will take full advantage of what virtual connections are available to make things work.

If you get a chance, reach out and welcome Brian to NISS!

UPDATE: NISS ACTIVITIES PROVIDE ACCESS TO UNDERSTANDING STATISTICAL SIGNIFICANCE

Beginning in 2018, NISS organized a number of events: panels, presentations, discussions and even debates that focused on the topic of statistical significance and the issues surrounding these controversies.

NISS as Neutral Expert

NISS has served as an invited collaborator and consultant with the National Center for Education Statistics (NCES) for many years. The NCES collects data on the state of education via validated assessments, surveys and collections of administrative data. In September 2018 NISS convened an expert panel and published a report regarding the results that NCES should report as significant, how this significance is reported and most importantly, how it should this be explained to others. (See [“Significance and Non-Significance NCES Reports”](#)) As a follow-up to this initial report, in March 2019 NISS was again involved in convening an expert panel whose charge was to recommend how to report the importance of significant results clearly and accurately in a manner that moves away from the $p < 0.05$ standard in a way that is understandable to the public and acceptable to academic institutions. (See [“Citing Significance in NCES Data Reporting”](#)) The goal of both reports was twofold: to make the language and methodology of the information in the report consistent, and at the same time understandable for statisticians, policy makers, and the public.

NISS as Collaborator

NISS has also convened and hosted a series of more public panel discussions and webinars that brought to the stage individuals recognized for their contributions in this area.

In May of 2019 NISS hosted a webinar entitled, [“Alternatives to the Traditional p-value.”](#) This webinar featured **Nicole Lazar** (University of Georgia and Penn State), one of the editors of the ASA’s 2016 statement (mentioned above) who contended that the replicability / reproducibility crisis is something that statisticians and scientists need to address. **Daniel Jeske** (University of California, Riverside), having carefully reviewed each of the papers published in the special issue of *The American Statistician*, provided specific remarks highlighting those papers recommending alternatives to the p-value that he thought were especially intriguing. And **Jessica Utts** (University of California, Irvine) who provided specific advice on how to think about implementing change, sharing four recommendations for what statisticians and educators can do.

In November of 2019 a follow up webinar [“Digging Deeper from the Radical to the Reasoned: p-value Alternatives Offered by Experts in NISS Webinar.”](#)



This event featured three authors whose papers were published in the special issue of *The American Statistician*. The titles of their talks provide a glimpse of their underlying opinions. These included **Jim Berger** (Arts and Sciences Professor of Statistics at Duke University), “Three recommendations to improve the use of p-values,” **Sander Greenland** (Emeritus Professor of Epidemiology and Statistics at the University of California, Los Angeles), “Statistics as a condemned building: A structural analysis and plans for demolition and reconstruction,” and **Robert Matthews** (Visiting Professor in the Department

of Mathematics at Aston University, Birmingham, UK), “The analysis of credibility.”

In May of 2020 NISS hosted a third webinar that continued the conversation:

[“NISS Webinar Hosts Third Webinar on the](#)

[Use of p-values for Making Decisions.”](#) The speakers for this webinar were **Yoav Benjamini**, the Nathan and Lily Silver Professor of Applied Statistics at the Department of Statistics and Operations Research at Tel Aviv University, **Alicia Laura Carriquiry**, Distinguished Professor of Statistics at Iowa State University, and **Hsien-Ming James Hung**, Director of Division of Biometrics I, Office of Biostatistics, Office of Translational Sciences, Center for Drug Evaluation and Research (CDER), U.S. Food and Drug Administration (FDA). Again, the range of perspectives is evident in the titles of the talks. Whereas Yoav spoke on, “Replicability problems in science: It’s not the p-values’ fault”, Alicia shared an differing perspective, “P-values are rarely used in forensic science and the criminal justice system. That is too bad.” James, on the other hand, directed his comments at the role of multiplicity adjustments within regulatory applications.



NISS took a different approach to discussing p-values in October of 2020. While it is certainly interesting to get into the specific details of

examples from individual presentations, NISS noticed that the interesting give and take of the question/answer time in the previous sessions always seemed too short for the number and kinds of questions that were being asked by attendees. So, **Dan Jeske**, moderator of [The Statistics Debate](#) devised a consistent, rolling format that provided each of the participants, **Jim Berger** (Duke University), **Deborah Mayo** (Virginia Tech), **David Trafimow** (New Mexico State University), with equal opportunities to be the first to respond to a question as well as respond or follow-up based on the remarks of the other participants. In fact, while the participants were given selected questions ahead of time so they had a chance to think about their responses, the group opted not to have a practice session, so their reactions to each other were extemporaneous and unscripted! The purpose of this event was to shed a spotlight on and get at the explanations of the main features (pro and con) that surround some of the controversies on the use of p-values.



NISS as Information Provider

Statistical significance is one area, which NISS has targeted in recent years through a variety of methods. Wherever possible, the resources associated with these projects or events are made public through the organization’s website. Here, you can find executive summaries or full text of papers, synopses of events, recordings of webinars as well as, with permission, copies of the slides that were used by the speakers.

NISS Affiliates are the driving force and resource for defining and implementing the direction of much of these efforts. Become a NISS Affiliate and get involved in determining the needs of tomorrow’s statisticians!

To honor the work and actions of the late **Ingram Olkin**, an eminent statistician, mentor and contributor to social causes, NISS brings together experts and researchers together from a variety of fields and backgrounds into forums. The focus of these forums is to bring forward a current societal issue that might benefit from attention from the statistical community and others.

The Ingram Olkin Forum committee is currently directing their energies towards three separate topic areas where statisticians and researchers gather to share and discuss research around the following:

Unplanned Clinical Trial Disruptions

What are the implications of unplanned disruptions of clinical trials? What strategies can be put into place to ensure the integrity of statistics using data that have already or will not be collected? Are there changes to methods or plans that researchers can put into place moving forward?

During Day One of this multi-day forum, experts from various agencies within the National Institutes for Health presented the impact of the COVID-19 pandemic on clinical trials in progress, about to start, and even those being planned. Day Two brought together three more experts from the FDA, the CDC the European Medicines Agency to share their perspectives. On Day Three, more than two dozen specialists with specific interest met online as a working group to investigate the first specific topic – estimands and missing data. Then Day Four brought together a working group of experts to focus on randomization tests.

This past week a small group based on attendees from Day Four are getting together to draft a report entitled, “The Role of Randomizations Tests in Responding to Unplanned Clinical Trial Disruptions.” Additional working groups will be formed around other specific topics that will also direct their efforts towards understanding and articulating the role of other methods that will support those involved in clinical trials that have experienced disruptions over the past several months.

Algorithmic Fairness and Social Justice

On September 25, 2020 an interesting and knowledgeable group of statisticians gathered to discuss the fairness of algorithmic as they are used in determining social policy, evaluation, and discoveries

that involve or affect society. Typically constructed by statistical and machine learning (ML) methods, artificial intelligence (AI) may harbor biases affecting individuals or subgroups of individuals in the society, resulting in questions of fairness and the implications for justice. The remarks of the speakers at this forum helped us understand the importance of bringing better understanding of fairness within these contexts.

Speakers at this forum included **Kush Varshney** (IBM), **Kristian Lum** (University of Pennsylvania) and **Alex Chouldechova** (Carnegie-Mellon University). The remarks of the speakers were followed by an active question and answer session that was moderated by Claire Kelling (Penn State University). The panelists were kept busy responding to questions from the 90+ attendees of the session. The back and forth between panelists captured the attention of everyone involved and made it clear that continued conversation on this and related topics is not only important, but necessary. Keep your eyes open for additional Ingram Olkin Forum Series sessions that continue to explore this topic!

The Opioid Crisis

Finally, a topic that was initially planned for discussion earlier in the year but was postponed because of the pandemic will take place on May 4, 2021. More information about this event will become available soon!

The latest information about any of the [Ingram Olkin Forum series events](#) can be found on the NISS website!

Check it out!



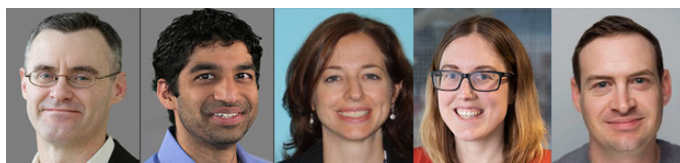
Share information about these forum events with colleagues both in statistics but also in related fields.

JUST IN! COVID AND THE SCHOOLS: MODELING OPENINGS, CLOSINGS, AND LEARNING LOSS

December 16, 2020 12 - 2 pm ET

In this Ingram Olkin “Statistics Serving Society” Forum, experts from around the country will share statistical and data-analytic challenges they have faced, as they have reported on and researched issues around the impact of COVID-19 in U.S. schools. Brief panel presentations will begin with Stephen Sawchuck of *Education Week* sharing what he has learned about whether and how school districts have used data to aid decision making about COVID-19. Researchers from several major research and development institutions will then share what they have learned about the impact of COVID-19 on schools, and will describe statistical models they have proposed and implemented

for school closings and re-openings, and for COVID’s impact on learning.



Speakers: (left to right) Brian Gill (University of California, Berkeley) Ravi Goyal (Harvard University) Julia Kaufman (New York University) Megan Kuhfeld (UCLA) Stephen Sawchuck (Education Week)

NOVEMBER

Essential Data Science for Business: Causal Inference and Uplift Modeling**Event Date:** November 18, 2020 1-4 ET**Event Location:** Online Tutorial

In this tutorial, the concept of Uplift will be introduced. We will review existing methods, contrast with the traditional approach, and introduce a new method that can be implemented with standard software. A method and metrics for model assessment will be recommended. Our discussion will include new approaches to handling ... ([read more](#))

NISS Affiliate Graduate Student Networking Event: Meeting with Alumni**Event Date:** November 19, 2020 at 1:00 PM ET**Event Location:** Online Meetup

Join us for our first “Meeting with the Alumni” on November 19, 2020 at 10:00 AM Pacific Time. At this meeting, alumni will be sharing their experiences in the job market and answer your questions. We look forward to seeing you (virtually) there! Meet with Alumni: Ark Fang (Data Scientist,... ([read more](#))

NISS Academic Affiliate Meetup: How to Present Your Research**Event Date:** November 30, 2020 1:30 - 3 pm ET**Event Location:** Virtual Meet-up

The NISS Academic Affiliate Committee is holding a virtual meet-up on November 30, from 1:30-3pm ET, on “How to Present Your Research”. Presenting technical research clearly in front of a large audience is an essential and extremely valuable skill set for a statistician. Whether you are... ([read more](#))

DECEMBER

Essential Data Science for Business: Deep Learning**Event Date:** December 2, 2020 1-4 pm ET**Event Location:** Online Tutorial

The tutorials in this NISS series involve the Top 10 analytics approaches of the key topics that are used in business today! Students and faculty, these are perhaps the top ten most important and practical topics that may not be covered in your program of study. (Review the Overview Presentation... ([read more](#))

COPSS-NISS COVID-19 Data Science Webinar Series: The Statistics of COVID-19 Vaccine Trials**Event Date:** December 3, 2020 noon - 1pm ET**Event Location:** Online Webinar

With early results of COVID-19 vaccine efficacy trials emerging, everyone is eager to understand and interpret their findings. In this session, we will take a deep dive into the design and analysis of COVID-19 vaccine trials, with a focus on Phase 3 efficacy trials. Topics to be covered... ([read more](#))

Check the [NISS Events webpage](#) for
up to date event info!

Fall 2020 Virtual Academic Career Fair: Finding a Position During the Pandemic, Part 2**Event Date:** December 9, 2020 12 - 1:30pm ET**Event Location:** Online Webinar

On November 11th NISS hosted an informative Career Fair that featured speakers that spoke about the open positions they are currently seeking to fill. We also asked them to comment on the changes to the hiring process they have put into place amid all of the changes in life since the COVID-19 and... ([read more](#))

Ingram Olkin Forum: COVID and the Schools: Modeling Openings, Closings, and Learning Loss**Event Date:** December 16, 2020 12 – 2 pm ET**Event Location:** Online webinar

In this Ingram Olkin “Statistics Serving Society” Forum, experts from around the country will share statistical and data-analytic challenges they have faced, as they have reported on and researched issues around the impact of COVID-19 in U.S. schools. Brief panel presentations will begin with... ([read more](#))

NISS Statistically Accurate Interactive Displays ... in Graphics!**Event Date:** Registration due by December 21, 2020 - 5 PM**Event Location:** Online Design Competition

Do you love to make insightful discoveries in education data and cutting-edge visualizations to display them? NISS has a COMPETITION FOR YOU! Great examples of data visualization and interactive graphics are popping up everywhere! See the examples collected at these sites: The 34 Best... ([read more](#))

JANUARY

NISS-Merck Meet-up on SARS-COV2 Vaccine Development**Event Date:** January 13, 2021 11 -12:45 pm ET**Event Location:** Virtual Meetup

Overview The National Institute of Statistical Science (NISS) and Merck are sponsoring a Virtual Meet-Up on SARS-COV-2 Vaccine Development. With the COVID pandemic having such a profound effect, everyone is hoping for a vaccine soon. At our last meet-up we examined how vaccines are developed with... ([read more](#))

MARCH

Webinar Series: Mathematical Foundations of Data Science**Event Date:** March 27th, 2021 11am ET**Event Location:** Online Webinar

Harnessing structure and algorithmic properties for scalable learning methods over networks Speaker Na Li, Harvard University Abstract Recent radical evolution in distributed sensing, computation, communication, and actuation has fostered the emergence of cyber-physical networked systems, across a... ([read more](#))

APRIL

13th Annual Conference on Statistical Issues in Clinical Trials: Cluster Randomized Clinical Trials (CRTs): Challenges and Opportunities

Event Date: Monday, April 12, 2021 - 8:30 am to 4:30 pm ET

Conference Theme Cluster Randomized Clinical Trials: Challenges and Opportunities Save the Date! Registration opens January, 2021! ([read more](#))

MAY

First CANSSI-NISS Health Data Science Workshop

Event Date: May 6-8, 2021

Nowadays, statisticians and health data scientists actively work together on the frontier of biological, medical, and public health research. The transdisciplinary collaboration not only develops the modern foundations of Health Data Science but also accelerates the pace of scientific discovery and... ([read more](#))

OCTOBER

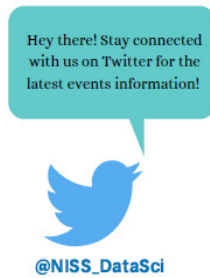
AISC 2021

Event Date: October 8 - 10, 2021

Event Location: Greensboro, North Carolina, 27412

International Conference on Advances in Interdisciplinary Statistics and Combinatorics The main objective of the conference is to promote interdisciplinary research involving statistical techniques. These techniques are becoming increasingly important in all fields of scientific discovery. A unique... ([read more](#))

Check the [NISS Events webpage](#) for up to date event info!



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<https://www.niss.org/careers>

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