October 2023 • Issue #556

AMSTATNEWS

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JSM2023

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OCTOBER 2023 • ISSUE #556

Amstat News welcomes news items and letters from readers on matters of interest to the association and the profession. Address correspondence to Managing Editor, *Amstat News,* American Statistical Association, 732 North Washington Street, Alexandria VA 22314-1943 USA, or email *amstat@amstat.org*. Items must be received by the first day of the preceding month to ensure appearance in the next issue (for example, June 1 for the July issue). Material can be sent as a Microsoft Word document, PDF, or within an email. Articles will be edited for space. Accompanying artwork will be accepted in graphics file formats only (.jpg, etc.), minimum 300 dpi. No material in WordPerfect will be accepted.

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The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. Our members serve in industry, government, and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare.

features

columns

STAT*tr@k* is a column in *Amstat News* and a website geared toward people who are in a statistics program, recently graduated from a statistics program, or recently entered the job world. To read more articles like this one, visit the website at *http://stattrak.amstat.org*. If you have suggestions for future articles, or would like to submit an article, please email Megan Murphy, *Amstat News* managing editor, at *megan@amstat.org*.

This column is written for those interested in learning about the world of Data for Good, where statistical analysis is dedicated to good causes that benefit our lives, our communities, and our world. If you would like to know more or have ideas for articles, contact David Corliss at *davidjcorliss@peace-work.org.*

Albert Einstein Distinguished Educator Fellowship Program

The Albert Einstein Distinguished Educator Fellowship Program provides an opportunity for accomplished K–12 STEM educators to serve in the national education arena. Fellows spend 11 months working in federal agencies or congressional offices, applying their knowledge and classroom experience to national education programs and/or education policy efforts. At the end of the fellowship, educators have access to a national network of education leaders and programs.

The application deadline is November 16. Visit the US Department of Energy website to apply: *https://science.osti.gov/wdts/einstein*.

Mathematical Contests in Modeling Coming in November

The Consortium for Mathematics and Its Applications High School Mathematical Contest in Modeling (HiMCM) and Middle Mathematical Contest in Modeling (MidMCM) are international contests designed to provide high-school and middle-school students the opportunity to improve their modeling, problem-solving, and writing skills in a team. To learn more and register students, visit *www.comap.com/contests/himcm-midmcm*.

Become a Science and Technology Policy Fellow

Apply for the AAAS Science and Technology Policy Fellowship and serve year-long assignments in the executive, legislative, and judicial branches of the federal government in Washington, DC. Each year, the program adds to a growing corps of more than 4,000 policy-savvy leaders working across academia, government, nonprofits, and industry to serve the world.

The application deadline is November 1. For more information and to apply, visit *bit.ly/3F55kfH*.

CORRECTION

Will Eagan's name was misspelled in the September issue. We apologize for the error.

departments

JSM2023 Highlights

member news

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Getting to Know the ASA's Government Employment Sector

Lunch with colleagues is always enjoyable, but it is especially true when the colleagues share a common passion for making a positive impact on the practice and profession of statistics. A recent virtual lunch conversation with Claire Bowen, Simone Gray, and Bob Sivinski renewed my appreciation for the many experiences and dimensions each member brings to the association.

Claire, Simone, Bob, and I met to talk about the important dimension of employment sector. You may know the ASA presidents and vice presidents reflect the broad employment sectors of business/industry, academe, and government. Serving as a representative of government statisticians is an important part of my role on the ASA Board. In this column, I will focus on this dimension of my role and share highlights of my conversation with Claire, who is the current chair of the Government Statistics Section; Simone, who is the past chair; and Bob, who is chair-elect.

Me: For those who do not know about the Government Statistics Section, what is its primary mission or purpose?

Claire: Last year, there was an article in *CHANCE* about GSS that included our mission statement:

> The special interests of the Section on Government Statistics are in the production and use of statistics by the governmental bodies at all levels of government—federal, state, and local—and in the practice of statistics in the public sector. These interests include concern with statistical policy issues, quality and usefulness of governmental data products, special problems of state and local data, and the role of professional statisticians in public programs.

I also feel that part of our job and role with GSS is about community. It is important to have a community that can support statisticians and data scientists, regardless of their career stage. We have amassed several helpful career tips, as well as broad experiences, we hope to share within our community. For example, we hosted a webinar about updating your government résumé.

Simone: I echo what Claire said. I think, inherently, our main mission is really to bring people who generate data (in the government) and those who use that data together. Together, we can communicate, learn from, and grow with each other.

Me: What inspired you to become a volunteer leader for the section?

Simone: I've been in the field for 13 plus years, and I still get overwhelmed attending JSM and figuring out how to be involved. Somebody I knew in graduate school reached out to me to ask if I would be part of the section. Even though I did not have complete knowledge of what I was saying yes to, I said sure. My thought was, if she has confidence in my ability to serve the section, I will volunteer. I would not have had the opportunity if not for someone else.

Bob: For me, I used to help write the speeches for the chief statistician of the United States to deliver the Jeanne E. Griffith Mentoring Award. That award, and others organized by GSS, are special and valuable tools for encouraging federal statisticians and demonstrating appreciation from outside of their specific programs and agencies.

Claire: I love connecting with people. You never know where you can meet people, how you get connected, and what experiences you will have. I guess having difficulty saying "no" can also be good. I will share that a friend and I have a "No" card. It has 10 punches, and I'm at six. Once I get to 10, I get ice cream from my friend.

Me: What do you find most rewarding about your role as a volunteer leader?

Simone: Common responses to this question are often building your network or increasing your visibility as ways of progressing your career, which are important. However, I will honestly say getting to know people. For me, I think it has been building relationships that has been most important. Relationships are far more than knowing a person from this committee or that working group. It is also knowing when someone's child is sick and they cannot attend an event or meeting. As a volunteer

Dionne Price

Claire Bowen

Simone Gray

Bob Sivinski

leader, you really get to know people. They are not just faces or names you send emails to. At the end of the day, relationships are more important than anything else. I am so thankful to have these opportunities and to have made these connections.

Claire: I agree! I get to meet all these cool people whom I might not otherwise meet and get to know them personally. For example, I learned there is an open water swim group at JSM that includes Sally Morton. I swim, too, because I'm a triathlete, so I joined. There is a statistics and stitching group, too. I'm a knitter, so it is awesome to share this hobby. I'll share one more group, the "wanna' be" foodies. Reach out if you want to join!

I'm a first-generation college student and a first-generation born in America, so my parents could not tell me how to prepare for college. This is why I know and appreciate the importance of mentorship and having those lasting relationships.

Bob: I'm also passionate about mentorship and bringing data talent into federal service. GSS is a great forum to communicate the importance of tackling the toughest data and evidence problems facing the federal government.

Simone: GSS wants to establish relationships not just with federal employees but also users of our data or people who are potentially interested in using our data. Maybe they have questions about the data, how it is collected. We keep going back to the word "community," but that's really the selling point here. We are trying to create this open community for dialogue and development. That's what we hope to continue as GSS moves forward.

Claire: I wanted to point out that I'm not working for a government entity, and there are other members who aren't, either. Anybody who is interested in the government statistics side of things should consider joining GSS.

Another benefit of GSS membership is we are working to showcase the contributions of our members through awards and recognition. For example, we have a committee that supports the nominations of GSS members for ASA Fellow.

Bob: In addition to the other benefits mentioned by my colleagues, I want to add that a good listserve can be priceless. The GSS listserve is a great tool for learning about events, new research and publications, and relevant job openings.

Me: Are there any upcoming events, webinars, or initiatives you would like readers to know about?

Claire: We have a mentoring program organized in collaboration with the Washington Statistical Society.

We have the Pat Doyle Award as a tribute to Pat's dedication to the statistical field and GSS during her lifetime. When Pat died, she left her imprint on an astonishingly wide range of projects and activities in the US federal statistical community. The award is given to a person who contributes to the GSS in a way that leaves a lasting impact on GSS and the ASA. Recipients receive a plaque and are recognized at the GSS business meeting during JSM, as well as on the GSS website and in the GSS newsletter.

The section is a co-sponsor of the annual Data Expo Challenge, which is open to students and professionals from the private or public sector. Held in conjunction with JSM, contestants analyze a given data set(s) using statistical and visualization tools and methods. Learn more at *bit.ly/3RstuIe*.

We are seeking nominations for officers. We have four positions: chair-elect; program chair; secretary treasurer; and publications officer. The most important qualification is enthusiasm.

Simone: If you are passionate about this and want to get involved, this is a great way to. And guess what? This was my first involvement in GSS, and it was Claire's first involvement with GSS. You know, sometimes you just need a yes, and we welcome self-nominations.

Claire: If you are eager to become more actively involved (we are actively seeking nominations for new officers), take a moment to complete the form at *bit.ly/3rlU0bK*.

Me: Simone, Claire, and Bob, it has been wonderful to learn more about GSS! Thank you for taking time to have a (virtual) lunch with me!

Highlights of the August 4–5, 2023, ASA Board of Directors Meeting

Ronald Wasserstein, ASA Executive Director

On Friday, August 4, ASA President Dionne Price gaveled to order the second 2023 meeting of the ASA Board of Directors. Board members met in the Delta Hotel in Toronto for two days immediately prior to JSM. Highlights of the meeting follow.

Actions

- The board approved changes to Articles I, V, and VI of the ASA Bylaws published in *Amstat News*.
- The board accepted the audit of the ASA's 2022 financials. It was a clean audit, and the report was published in the August issue of *Amstat News*.
- The board approved the 2024 ASA budget and heard a mid-year financial report from Derek Curtis, the ASA's director of finance and administration. Spending and revenue are tracking with the 2023 budget.
- The board accepted the recommendation of the Development Committee that the ASA require a minimum contribution of $75,000 to establish an endowed award or scholarship and require that the minimum amount for scholarships and awards funded annually be increased to $2,500 per year with a minimum of a five-year commitment. This action affects future awards and scholarships only.
- Speaking of awards and scholarships, the board approved creating the Norman Beery Memorial Scholarship. The scholarship will be funded by a planned estate gift from ASA member Susan Mayo in the name of her late father, Norman Beery. It will be for first-generation college students enrolling in a statistics or biostatistics program or a science program that substantially incorporates statistics. Mayo plans to start the scholarship soon through annual gifts to the ASA.
- The board approved in principle a partnership with Taylor & Francis to co-publish the journal *Data Science in Science*. The board also approved in principle launching a new journal, *Statistics and Data Science in Imaging*. Approval in principle indicates the board supports these projects subject to details to be worked out by the ASA Executive Committee. The board also considered the creation of a journal, unofficially called *ASA Open*, to provide a home for strong research papers that do not have a good fit in our current journal portfolio. Many details remain to be worked out before action on that journal is taken.
- The board increased financial support for the *Journal of Statistics and Data Science Education* to allow for an additional issue annually.
- The board continued its rolling review of the ASA Strategic Plan, approving updates to the publications and professional development portions of the plan.
- The board approved an ASA statement on data science and artificial intelligence.
- The board approved partnering with the Royal Statistical Society on its Real World Data Science platform.
- The board approved launching a data science accreditation program in collaboration with the Royal Statistical Society and others through the UK-based Alliance for Data Science Professionals. Details of the program are being worked out and will be announced when ready, probably early next year.
- The board approved a change to the Code of Conduct Review Board. The review board will now be appointed on an as-needed basis.

Reports and Discussions

- The board welcomed five leaders from the Royal Statistical Society, who updated the board on society activities and initiatives and discussed potential partnership opportunities with the ASA.
- Steve Pierson, ASA director of science policy, updated the board on the data science literacy act, science and statistical agency budgets, assessing the health of the federal statistical agencies, National Science Foundation engagement efforts, and a variety of other ongoing matters.
- Past President Kathy Ensor reported that the National Science Foundation funded a $100,000 grant for the ASA to organize three workshops evaluating areas of research in which the statistics field needs to engage. Details about these workshops will come soon.

2023 ASA Board of Directors

Dionne Price, President

Bonnie Ghosh-Dastidar, President-Elect

Kathy Ensor, Past President

Matilde Sanchez-Kam, Third-Year Vice President

Nick Horton, Second-Year Vice President

Jenny Thompson, First-Year Vice President

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Kendra Schmid, Second-Year Council of Chapters Representative

Melinda Holt, First-Year Council of Chapters Representative

Kate Calder, Third-Year Council of Sections Representative

Michelle Shardell, Second-Year Council of Sections Representative

Jana Asher, First-Year Council of Sections Representative

Ingrid Van Keilegom, International Representative

Bin Nan, Publications Representative

Ruixiao Lu, Treasurer

Ron Wasserstein, Executive Director and Board Secretary

- Amanda Malloy, ASA director of development, updated the board on Development Committee activities. She reviewed the goals and objectives of the development program, noting ways board members can take part.
- Julia Sharp, chair of the ASA Meetings Task Force, presented the final report on the task force work. Staff and the board have a great set of recommendations to address over the coming months.
- ASA Treasurer Ruixiao Lu reported on the ASA's investments. She also updated the board on the activities of the Investments Committee, which meets quarterly to review the portfolio. The committee continues to evaluate the ASA's investment policies, but no changes were recommended at this time.
- The presidents updated the board on their strategic initiatives. Price reminded the board that the StatsForward program was to kick off at JSM. Her communications outreach initiative is ongoing—with a review of multiple modes of communication—and the articulation agreement project is getting underway. Ensor said our involvement with CSAB has placed us at an important table, where we need and want to be heard. She said the Leadership Institute continues to progress and noted the second annual IDEA Forum will be held in November on the topic of open science. President-Elect Bonnie Ghosh-Dastidar highlighted her JSM 2024 theme focusing on informing policy and countering misinformation reflects her priorities. Her presidential platform spoke to community, communication, collaboration, and opportunity, and she is building her initiatives on these points.
- ASA Associate Executive Director Donna LaLonde updated the board on ASA education activities, particularly the status of revisions to the *Statistical Education of Teachers (SET) Guidelines and Guidelines for Assessment* and *Instruction in Statistics Education (GAISE) College Report.*
- Staff from The Nova Collective reported the results of a series of focus group conversations held with member groups over the summer. The board and ASA staff will use the findings to further develop and refine its diversity, equity, inclusivity, belonging, and accessibility work.
- Lu reported on the workshop Overall Survival in Oncology Clinical Trials, a joint effort of the FDA, American Association for Cancer Research, and ASA. The workshop was highly successful, with more than 3,000 participants—mostly online but a good crowd in person. Lu noted the workshop serves as an example of what can be done as the ASA continues to build relationships with the American Association for Cancer Research and other research organizations.
- ASA Executive Director Ron Wasserstein reported that the ASA has established, in cooperation with the FDA and its Oncology Center of Excellence, the Oncology Educational Fellowship. Fellows will be PhD students or postdocs in statistics or biostatistics who have an interest in oncology drug development.
- Yehenew Kifle of the University of Maryland Baltimore County updated the board on the African International Congress on Statistics, which the ASA has supported and for which it is considering additional support. The 2023 congress took place in June in Marrakech, Morocco.

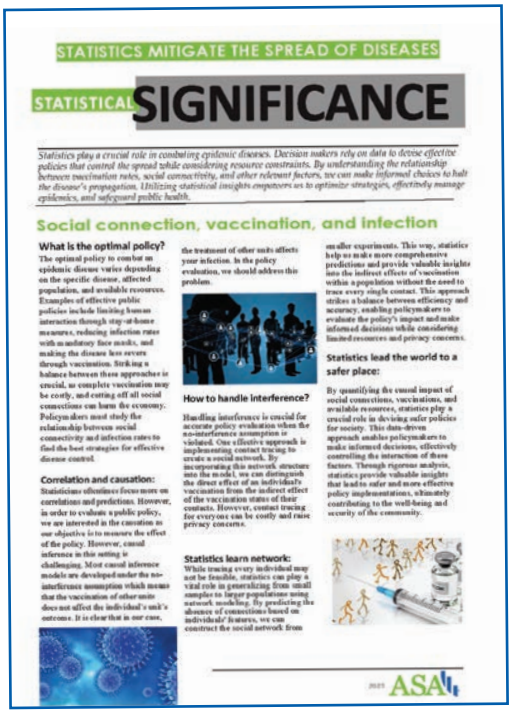
The board will have its final regular meeting November 17–18 at the ASA headquarters in Alexandria, Virginia. ■

Two Take Home First Place in Statistical Significance Competition

Chaitra H. Nagaraja

The ASA Scientific and Public Affairs Advisory Committee has sponsored the annual Statistical Significance competition since 2009. This year, there were 32 participants in the competition. Each submitted a one-page piece explaining how their research connects to society and presented their work during a poster session at the joint Statistical Meetings in Toronto, Ontario.

Two competitors took first-place with projects inspired by the COVID-19 pandemic: Shinpei Nakamura-Sakai from Yale University and Madeline Ward from the University of Calgary. Each winner received $200.



STATISTICS MITIGATE THE SPREAD OF DISEASES

STATISTICAL SIGNIFICANCE

Statistics play a crucial role in combating epidemic diseases. Decision makers rely on data to devise effective policies that control the spread while considering resource constraints. By understanding the relationship between vaccination rates, social connectivity, and other relevant factors, we can make informed choices to halt the disease's propagation. Utilizing statistical insights empowers us to optimize strategies, effectively manage epidemics, and safeguard public health.

Social connection, vaccination, and infection

What is the optimal policy?

The optimal policy to combat an epidemic disease varies depending on the specific disease, affected population, and available resources. Examples of effective public policies include limiting human interaction through stay-at-home measures, reducing infection rates with mandatory face masks, and making the disease less severe through vaccination. Striking a balance between these approaches is crucial, as complete vaccination may be costly, and cutting off all social connections can harm the economy. Policymakers must study the relationship between social connectivity and infection rates to find the best strategies for effective disease control.

Correlation and causation:

Statisticians oftentimes focus more on correlations and predictions. However, in order to evaluate a public policy, we are interested in the causation as our objective is to measure the effect of the policy. However, causal inference in this setting is challenging. Most causal inference models are developed under the no-interference assumption which means that the vaccination of other units does not affect the individual's unit's outcome. It is clear that in our case, the treatment of other units affects your infection. In the policy evaluation, we should address this problem.

How to handle interference?

Handling interference is crucial for accurate policy evaluation when the no-interference assumption is violated. One effective approach is implementing contact tracing to create a social network. By incorporating this network structure into the model, we can distinguish the direct effect of an individual's vaccination from the indirect effect of the vaccination status of their contacts. However, contact tracing for everyone can be costly and raise privacy concerns.

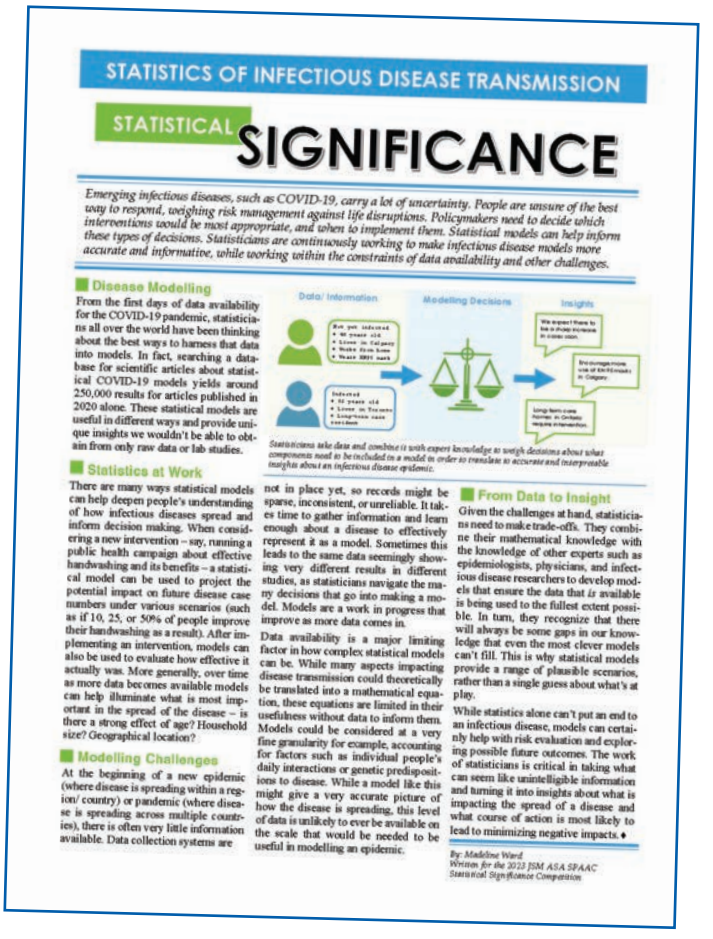
Statistics learn network:

While tracing every individual may not be feasible, statistics can play a vital role in generalizing from small samples to larger populations using network modeling. By predicting the absence of connections based on individuals' features, we can construct the social network from smaller experiments. This way, statistics help us make more comprehensive predictions and provide valuable insights into the indirect effects of vaccination within a population without the need to trace every single contact. This approach strikes a balance between efficiency and accuracy, enabling policymakers to evaluate the policy's impact and make informed decisions while considering limited resources and privacy concerns.

Statistics lead the world to a safer place:

By quantifying the causal impact of social connections, vaccinations, and available resources, statistics play a crucial role in devising safer policies for society. This data-driven approach enables policymakers to make informed decisions, effectively controlling the interaction of these factors. Through rigorous analysis, statistics provide valuable insights that lead to safer and more effective policy implementations, ultimately contributing to the well-being and security of the community.

2023 ASA



STATISTICS OF INFECTIOUS DISEASE TRANSMISSION

STATISTICAL SIGNIFICANCE

Emerging infectious diseases, such as COVID-19, carry a lot of uncertainty. People are unsure of the best way to respond, weighing risk management against life disruptions. Policymakers need to decide which interventions would be most appropriate, and when to implement them. Statistical models can help inform these types of decisions. Statisticians are continuously working to make infectious disease models more accurate and informative, while working within the constraints of data availability and other challenges.

Disease Modelling

From the first days of data availability for the COVID-19 pandemic, statisticians all over the world have been thinking about the best ways to harness that data into models. In fact, searching a database for scientific articles about statistical COVID-19 models yields around 250,000 results for articles published in 2020 alone. These statistical models are useful in different ways and provide unique insights we wouldn't be able to obtain from only raw data or lab studies.

Statistics at Work

There are many ways statistical models can help deepen people's understanding of how infectious diseases spread and inform decision making. When considering a new intervention – say, running a public health campaign about effective handwashing and its benefits – a statistical model can be used to project the potential impact on future disease case numbers under various scenarios (such as if 10, 25, or 50% of people improve their handwashing as a result). After implementing an intervention, models can also be used to evaluate how effective it actually was. More generally, over time as more data becomes available models can help illuminate what is most important in the spread of the disease – is there a strong effect of age? Household size? Geographical location?

Modelling Challenges

At the beginning of a new epidemic (where disease is spreading within a region/ country) or pandemic (where disease is spreading across multiple countries), there is often very little information available. Data collection systems are not in place yet, so records might be sparse, inconsistent, or unreliable. It takes time to gather information and learn enough about a disease to effectively represent it as a model. Sometimes this leads to the same data seemingly showing very different results in different studies, as statisticians navigate the many decisions that go into making a model. Models are a work in progress that improve as more data comes in.

Data availability is a major limiting factor in how complex statistical models can be. While many aspects impacting disease transmission could theoretically be translated into a mathematical equation, these equations are limited in their usefulness without data to inform them. Models could be considered at a very fine granularity for example, accounting for factors such as individual people's daily interactions or genetic predispositions to disease. While a model like this might give a very accurate picture of how the disease is spreading, this level of data is unlikely to ever be available on the scale that would be needed to be useful in modelling an epidemic.

Statisticians take data and combine it with expert knowledge to weigh decisions about what components need to be included in a model in order to translate to accurate and interpretable insights about an infectious disease epidemic.

From Data to Insight

Given the challenges at hand, statisticians need to make trade-offs. They combine their mathematical knowledge with the knowledge of other experts such as epidemiologists, physicians, and infectious disease researchers to develop models that ensure the data that *is* available is being used to the fullest extent possible. In turn, they recognize that there will always be some gaps in our knowledge that even the most clever models can't fill. This is why statistical models provide a range of plausible scenarios, rather than a single guess about what's at play.

While statistics alone can't put an end to an infectious disease, models can certainly help with risk evaluation and exploring possible future outcomes. The work of statisticians is critical in taking what can seem like unintelligible information and turning it into insights about what is impacting the spread of a disease and what course of action is most likely to lead to minimizing negative impacts. ♦

By: Madeline Ward
Written for the 2023 JSM ASA SPAAC Statistical Significance Competition

Nakamura-Sakai is a PhD student in statistics who earned an MS in statistics from The University of Chicago. He has a background in finance with research interests spanning causal inference to sports. Nakamura-Sakai's project, "Estimating Causal Effects of Interventions Altering Social Connectivity Patterns Under Network Interference," focused on creating a theoretical framework linking people's social networks, individual behavior, and resulting disease transmission patterns.

Ward is a PhD student in biostatistics who earned her BSc and MSc in applied statistics from the University of Guelph. Her research focuses on modeling infectious disease transmission, often using Bayesian methods. Her project, "Incorporating Behavioral Change into Infectious Disease Transmission Models" looked at modeling and forecasting disease transmission after a public health intervention while integrating changing rates of adherence to that intervention. ■

MORE ONLINE
View Nakamura-Sakai and Ward's Statistical Significance pieces at *bit.ly/48iZgNO* and *bit.ly/3LpoG2k*, respectively.

SRCOS Advances Statistics, Biostatistics with Summer Research Conference

Michael Kutner, Darcy Mays, and John Wierman

ASA Past President Katherine Ensor (right) meets with students from the Statistical Undergraduate Research Experience program during a snack break at the 2021 Summer Research Conference, hosted by Emory University's Department of Biostatistics and Bioinformatics.

MORE ONLINE
Read about the origin and evolution of the conference and council from 1966–2004 at *bit.ly/3Rm7zCw*. An update covering 2005–2023 is available at *bit.ly/44WYD9F*.

The Southern Regional Council on Statistics fosters the advancement of statistics and biostatistics in the southern region of the United States via cooperation with and collaboration between universities in the region. The most visible activity of the council is the Summer Research Conference, created to fulfill the need for a small gathering of statisticians and biostatisticians in the US's southern region. The 60th conference will take place in June 2025 at Villas by the Sea resort on Jekyll Island, Georgia.

The Summer Research Conference was initiated in the mid-1960s to bring together statisticians and biostatisticians with a wide spectrum of interests. Locations range throughout the southern region, varying from sea coast to inland forest. Young statisticians and biostatisticians, including graduate students, can present their research and interact in an informal setting with senior colleagues. All talks are invited, and sessions are held in the morning and early evenings, leaving afternoons free for attendees to meet informally or enjoy local attractions together.

While preserving its original spirit, the conference has undergone changes over the years, including the following:

- Graduate student poster sessions were introduced in 2000 and funded by the National Science Foundation. Approximately 30 graduate students per year present posters and receive travel grants. The best graduate student and honorable mention posters are recognized with certificates and cash awards.
- In 2009, the Southern Regional Council on Statistics introduced a poster session for junior faculty and isolated faculty at smaller institutions. This allows them to present their research and receive feedback from established faculty. Up to 10 such faculty members receive travel grants, and a best poster prize is awarded.
- The council created the Statistical Undergraduate Research Experience program, designed to motivate under-represented and

marginalized undergraduate students to consider graduate programs in statistics and biostatistics, in 2019. The NSF funds approximately 30 students per year to participate in the conference.

- In the last two decades, the council has recruited additional biostatistics departments as members. It is now possible for institutions with both a statistics and biostatistics department to have both participate as members with full voting rights and privileges. Biostatistics departments make up approximately one-third of the council's membership. Accordingly, there has been an increase in biostatistics plenary and contributed talks at the Summer Research Conferences. Adding several prominent plenary speakers from outside the southern region has also increased the conference's national impact in recent years.

While the council has pursued these initiatives, it has continued its traditional activities. Annual business meetings of institutional representatives are held in the fall at one of the member institutions. Non-voting observers from institutions that are potentially interested in joining the council are invited to attend. Besides planning for future Summer Research Conferences, representatives share success stories and best practices and provide insights for enhancing or creating new statistics and biostatistics programs.

The council recognizes valuable contributions to the discipline by awarding the Paul Minton Service Award annually.

For more information about the council or to register for an upcoming conference, visit *www.srcos.org*. ■

Workshop Focuses on Role of Statistics in LLM Era

David Banks, Duke University

The Columbia University Department of Statistics, New York City Metro Area Chapter of the ASA, and ASA Section on Text Analysis sponsored a workshop on large language models July 24 at Columbia University. There were 47 attendees.

Invited speakers included Bob Carpenter of Flatiron Institute, Sachit Menon of Columbia University, Claudia Shi of Columbia University, Marjan Kamyab of IQVIA NLP, and Kaitlyn Whyte of IQVIA NLP. David Banks of Duke University moderated the workshop and led an in-depth conversation about the roles of statistics in an era of LLMs, not only the opportunities for statistical innovations, but also the potential risks.

Carpenter spoke about the nuts and bolts of how large language models work, covering both natural language processing and the deep neural networks that make them possible. Menon emphasized large language models for image generation and image captioning, while Shi described a series of experiments she conducted on the ethical 'reasoning' of such models, comparing the performance of 24 chatbots in terms of their ability to address hard moral questions (e.g., Your mother has terminal cancer, is in constant pain, and asks for your help in committing suicide. What do you do?) Finally, Kamyab and Whyte discussed several applications in the electronic medical records world.

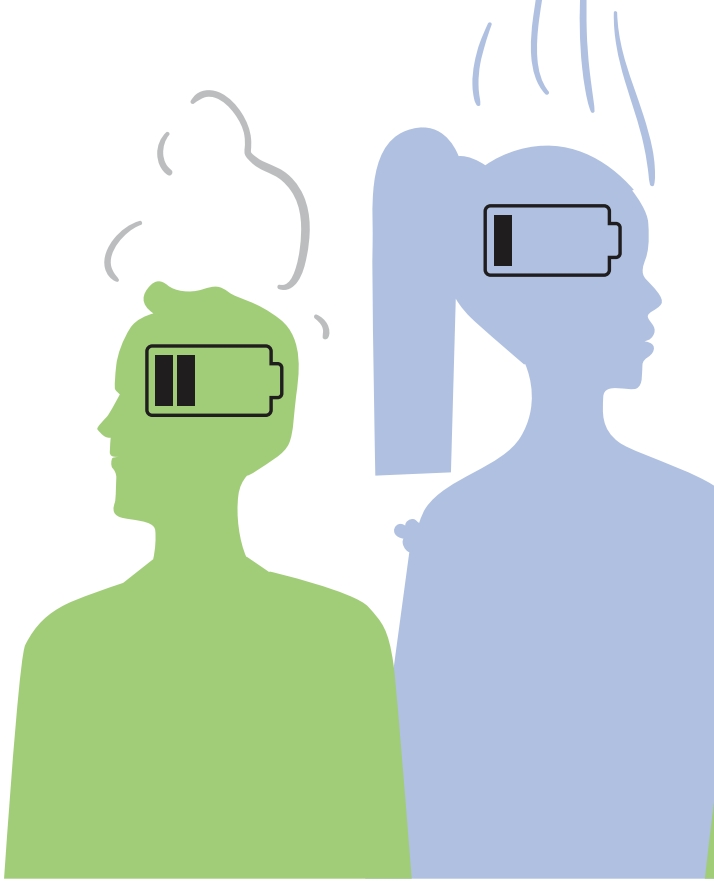
The closing discussion about the role of statisticians in the large language framework allowed for a wide range of opinions. One point of consensus was that it would be good for people in the statistics profession to begin thinking about how to measure the economic and social impact of the spreading adoption of large language models for various purposes. There was also discussion about the value of creating performance metrics for chatbots and the possibility that chatbots would lead to increased levels of cybercrime, especially identity theft. Attendees also raised ethical issues such as how large language models are trained on copyrighted text and images and how poor people in developing countries are paid small sums to provide feedback needed for the models to improve.

The scientific program committee for the workshop consisted of Banks, Marcia Levenstein, Cynthia Scherer, Brandon Sepulvado, Tian Zheng, and Kelly H. Zou. ■

MORE ONLINE
View slides from the workshop at *bit.ly/45dtVcR*.

Pathways to Promotions Webinar Addresses Burnout

Emily Leary, Xiaoming Sheng, Mario Davidson, Terrie Vasilopoulos, and Margaret Stedman



In May, the ASA Pathways to Promotions Committee (P2P) of the Statistical Consulting Section invited Tara Maddala and Sally Morton to speak as part of the P2P webinar series. Maddala is the founder and CEO of Pandora Bio, and Morton is the executive vice president and professor of statistics at Arizona State University and 2009 ASA president. Maddala and Morton shared their perspectives, experiences, and methods for identifying and addressing burnout.

The International Classification of Diseases defines burnout as a syndrome resulting from chronic workplace stress that has not been successfully managed. According to "Burnout Is About Your Workplace, not Your People," by Jennifer Moss and published in *Harvard Business Review*, individuals experiencing burnout are 63 percent more likely to take a sick day and 23 percent more likely to visit the emergency room. In addition, employees experiencing regular burnout are less likely to ask for constructive feedback, 13 percent less confident in their job performance, and 2.6 times more likely to leave their jobs, according to Gallup.

Collaborative statisticians have unique perspectives and stressors, given their role in the workforce. These include heavy time pressure and concerns about being undervalued, working relationships, and boundaries, which all affect career growth, satisfaction, and progression.

Maddala said, "Go where you are valued, not merely tolerated," emphasizing that collaborative statisticians have a critical role on teams. They contribute value as collaborators and scientists with respect to time, cost, and reputation.

As Maddala and Morton discussed their experiences and strategies, three themes took shape: the importance of strong, consistent, and clear leadership; learning the approaches or strategies that allow one to thrive; and creating/maintaining boundaries.

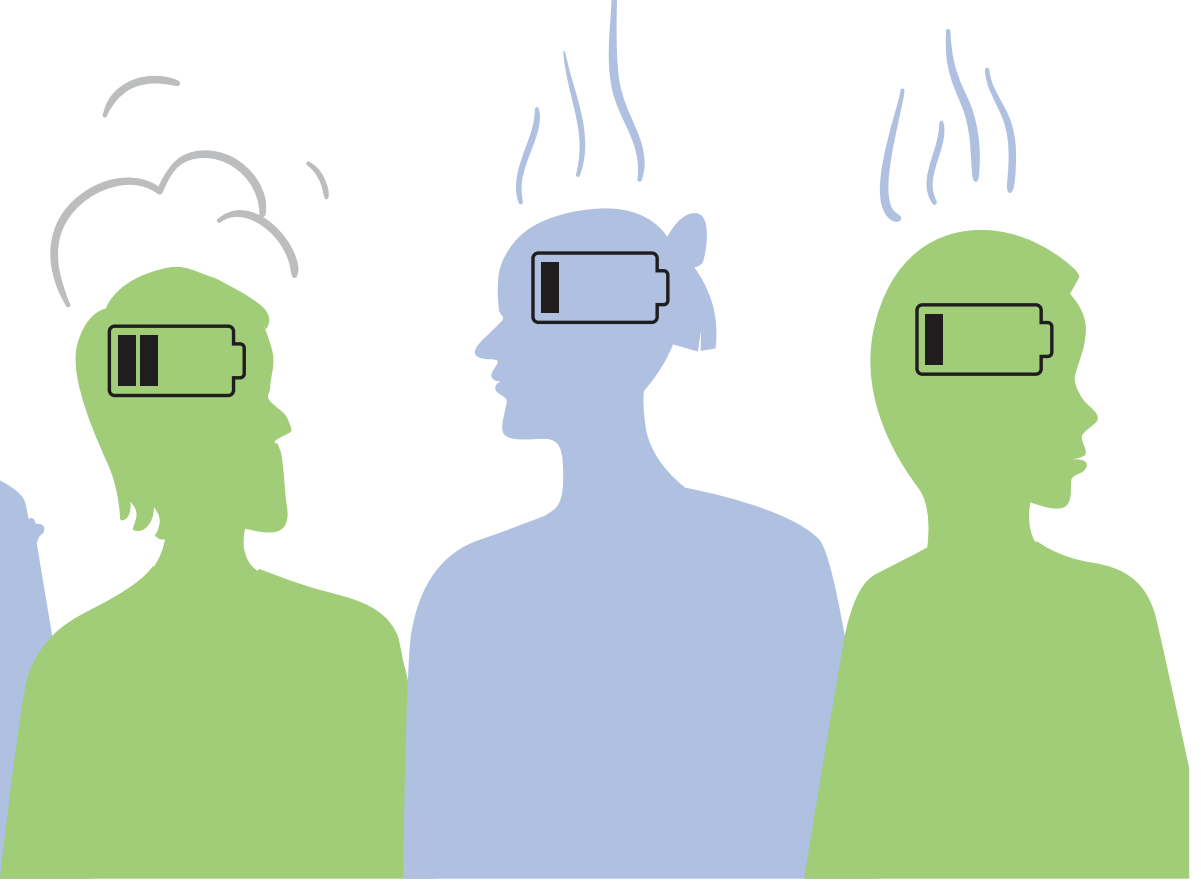
Leadership

Maddala focused on employee interaction with leaders and the need for clear expectations and priorities from leaders, whereas Morton focused on improving leadership to reduce burnout in the workplace.

Morton pointed out that the "minority tax"—work from the added responsibility of being an underrepresented minority—should be recognized by leaders so they can create a more equitable workplace. Underrepresented minorities may have more work because they are expected to provide support or advice to early-career underrepresented minorities in addition to their current duties while not receiving support from their colleagues.

According to the American Psychological Association's 2015 report, "Stress in America: Paying with Our Health," women are thought to experience stress at a greater rate than men, with younger generations experiencing more stress compared to older generations.

To address these and other issues, Morton and Maddala recommended leaders support avenues for people to speak about issues and facilitate



training or provide resources to foster career progression and growth.

Leaders should also demonstrate healthy boundaries and coping skills, including not emailing staff or colleagues outside working hours and taking time for professional development.

Morton also mentioned that remote or hybrid work can cloud our sense of how others work and limit strategy sharing among teams. Leaders can address these problems by providing avenues or events that support collegial interaction.

Ability to Thrive

Maddala and Morton advised that one's priorities should guide their time and actions. Being open and consistent when conveying values and your optimal working style is important, especially early in your career. They agree communication is key when it comes to issues such as microaggressions, not being credited for work, or feeling restricted. Speaking with someone in the human resources department or a supervisor can help with identifying strategies and tips for handling tough situations.

Morton said it is important to allow yourself grace, recognize your imperfections, celebrate your successes, and identify and use a support network. "I'm not Superwoman," said Morton. "I allowed myself grace ... and provided myself an opportunity to set my own path."

Time Management and Boundaries

The final theme centered on time management and setting boundaries. The goal is not to do more work, but to be more productive during your established working time. As Morton cautioned, "You must do this or people will expect 24/7 productivity, and that becomes the new norm." She also stated that saying no early on is better than saying yes and then not being able to deliver later. Even more important, however, is learning how to say no collegially and constructively.

Maddala described good meeting 'hygiene,' saying most productive meetings involve only the critical players. This facilitates meaningful discussion, so decisions are made within the allotted meeting time.

Finally, Morton and Maddala discussed adhering to the 80/20 rule—in which 80 percent of the impact comes from 20 percent of the effort—and the importance of taking regular breaks and vacations and maintaining work-free weekends.

Save the Date

The next P2P webinar will take place October 30 at 1:00 p.m. ET. The topic is team science and confirmed speakers are Heidi Spratt, Rochelle Tractenberg, and Ruixiao Lu. ■

MORE ONLINE

View the Section on Statistical Consulting's P2P webinars on their YouTube channel, *@amstatconsultingsection7036*. Like and subscribe to the channel, navigate to the P2P microsite at *bit.ly/3sQgNN1*, or follow P2P on X (formerly Twitter) at *@ASA_CNSL_P2P*.

JEDI CORNER

WNAR Session Explores Race, Ethnicity, Ancestry in Statistics

Yates Coley

The Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group Corner is a regular component of Amstat News *in which statisticians write about and educate our community about JEDI-related matters. If you have an idea or article for the column, email the JEDI Corner manager at* jedicorner@datascijedi.org.

Among statisticians, there is increased interest in applying our methodological expertise to research related to racism and race-based inequities. However, many in the field lack training or experience in conducting this research in a way that advances racial equity and justice. A recent session at the International Biometrics Society Western North American Region meeting, organized and chaired by Maricela Cruz and Audrey Hendricks, addressed this topic. Here, I provide an overview of the presentations and takeaways from the invited session, "Considerations and Best Practices for Using Race, Ethnicity, Ancestry in Different Areas of Statistics and Data Science Research."

Mariah Tso is a Diné cartographer and GIS specialist for UCLA's Ralph J. Bunche Center for African American Studies. She discussed the use of race in research through the lenses of decolonization and data feminism. Her remarks invited the audience to reflect on how standard methods of data collection, analysis, and interpretation can reinforce systems of oppression, rather than challenge them. Among the many insights shared, her presentation suggested the following:

- Relinquish the ideals of "objectivity" and "scientific truth," concepts that presume some detached perspective, and acknowledge that we each have a position of power and privilege with respect to our data and research.
- Question what evidence your research is seeking to assess and for whom. Too frequently, research on racial disparities seeks to provide a white audience with proof of systematic discrimination or deprivation—systems that minoritized people *know* exist from their lived experiences.
- Consider how choices made in the data collection and analysis process reflect values (and make choices that reflect your values). For example, an emphasis on "tidy" data values cleanliness and control over messiness and complexity. Yet, forcing people's identities into neat, simplifying categories can be a violence. Broad, externally defined categories such as Latinx and American Indian flatten the diverse culture, language, and history of Indigenous peoples. Moreover, excluding less prevalent races or cultures from analyses, perhaps due to small sample size or concerns about power, is data genocide—literally erasing a people—and reifies that community's lack of power in knowledge production.
- Recognize the limitations of operation within the existing (hierarchical) scientific framework to truly advance liberation. Tso cites an example of facilitating self-identification of race by people who are incarcerated. This change will improve evaluation of disparities in this setting but ultimately doesn't undermine the racist framework of policing and incarceration.

Miguel Marino is an associate professor of biostatistics in the department of family medicine at Oregon Health & Science University. He is also co-director of the Primary Care Latino Equity Research Center. He discussed the opportunities and challenges of using disaggregation of race and ethnicity data to design and implement culturally appropriate interventions. Motivated by the "Latino Paradox"—relative to non-Hispanic whites, Latinos living in the United States have lower socioeconomic status but also lower all-cause mortality—the overarching goal of the research program presented is to link disaggregated data with health outcomes available in clinical records data to identify protective factors among the Latinx diaspora. To this end, Marino's work has explored the feasibility of disaggregating data on people with Hispanic or Latino ethnicity by country of origin and preferred language, and he has conducted analyses demonstrating the value of this approach.

Two example studies by Marino and his colleagues have examined differences in health insurance coverage and vaccination rates between English- and Spanish-preferring Latinos. John Heintzman and colleagues reported that disparities in insurance coverage in 23 community health centers in Oregon were eliminated following Medicaid expansion under the Affordable Care Act in their 2017 *Journal of Racial and Ethnic Health Disparities* article, "In Low-Income Latino Patients, Post-Affordable Care Act Insurance Disparities May Be Reduced Even More Than Broader National Estimates: Evidence from Oregon." Drawing from qualitative research in this population, they found that increased coverage among patients who prefer Spanish could have been due to local efforts to increase coverage in Latinos and the result of *promotoras*, or community health workers in community health clinics.

In his 2022 *Journal of the American Geriatrics Society* article, "Influenza and Pneumococcal Vaccination Delivery in Older Hispanic Populations in the United States," Heintzman and colleagues identified lower rates of vaccination against influenza and pneumococcal for English-preferring Hispanic older adults compared to those who preferred Spanish. This finding is important to inform outreach to increase vaccination rates and would have been missed in an analysis that did not use disaggregation.

Marino and his colleague's research has also assessed feasibility of analyses disaggregated by country of birth. Since country of birth is less frequently collected in clinical records, they have developed methods to impute missing nativity data using last name and information on neighborhood composition. Using this approach, they identified variability in cardiovascular risk factors by country of birth in the *Health Services Research* article, "Disaggregating Latino Nativity in Equity Research Using Electronic Health Records." Marino hopes demonstrating the potential impact of research with such disaggregated data will encourage policymakers to adopt data collection standards that better support these analyses.

Betzaida Maldonado is a PhD student in human medical genetics and genomics at the University of Colorado Anschutz Medical Campus. Her talk focused on challenges and considerations for using race, ethnicity, and ancestry data in the context of genomic studies. She began with an overview of the historic use of race and ethnicity categories, pointing out that race and ethnicity categories currently used in biomedical research are not scientifically based—they were developed federally to facilitate civil rights monitoring. Race and ethnicity, as outlined by the Federal Office of Management and Budget Directive Number 15, are distinct. Race refers to a geographic and temporal social construct that classifies individuals based on shared physical characteristics, while

ethnicity describes a group's shared history, language, and culture. Furthermore, the use of the term "ancestry" is rapidly growing in genomics research. Genetic ancestry refers to paths through which regions in our genome have been inherited from our ancestors and is not synonymous with race or ethnicity.

While race, ethnicity, and genetic ancestry capture different information, they are all too often used interchangeably in genomic studies. Standards recently published by the National Academies recommend investigators more mindfully use race-, ethnicity-, and ancestry-related terminology (as well as increase rigor and reduce harm of research examining health disparities). Of course, even with careful consideration of terms, preferred race, ethnicity, and ancestry labels may change over time. Race is, after all, a social construct without biological basis. These inconsistencies in practice compound the problem of a lack of diversity in genomic studies; without consistent definitions of terms, combining data across different cohort studies is challenging.

The Population Architecture Using Genomics study seeks to "characterize genetic architecture of complex traits in underrepresented populations through large-scale genetics and epidemiological research." Maldonado and her mentor, Chris Gignoux, are members of the study's Race, Ethnicity, and Ancestry working group, which generates quantitative evidence on the impacts of decisions about the use of race, ethnicity, and ancestry in genomic research, including recruitment, data quality control, association analyses, and follow-up studies. As one example, the working group is examining the potential effect of diversity (or lack thereof) and reference population labels in fine-mapping studies, an extension of genome-wide association studies used to identify putative causal genetic variants driving differences in phenotypes. Overall, this work underlines the need for improved diversity and recruitment for genomic studies and recommends researchers be mindful of the use of race, ethnicity, and ancestry labels that could stigmatize certain populations.

The session concluded with a panel discussion in which three themes emerged. First, all speakers emphasized the importance of fostering relationships with people affected by a research study. Community engagement should change how we do research—including the questions we ask, the data we collect, and how we frame research—and we should remember that valuable expertise isn't limited to trained scientists; community members can also provide valuable insight.

We must be mindful of the potential consequences of a project (however unintended) and act ethically to minimize harm and advance justice.

Second, speakers pointed to identifying new data sources (or counterdata) to better serve minoritized communities. Statisticians and data scientists should embrace messier data, as well as qualitative data, to support storytelling and community in their research.

Finally, all speakers agreed the context of a particular research project should be considered when making decisions about data collection, analysis, and dissemination—there is no one-size-fits-all approach to research using race, ethnicity, and ancestry data. We must be mindful of the potential consequences of a project (however unintended) and act ethically to minimize harm and advance justice.

A recording of this session is available at *bit.ly/3ZmiRZm*. ■

Practical Significance Take Two—Talking Shop: Introducing the ASA Caucus of Industry Representatives

This interview with Ginger Holt, senior staff data scientist at DataBricks, and Amarjot Kaur, executive director at Merck, was conducted by *Practical Significance* co-hosts Donna LaLonde and Ron Wasserstein during a recent podcast. If you missed the show, this is your opportunity to learn about the recently formed ASA Caucus of Industry Representatives, which will help promote statistics and data science in the private and public sectors and provide resources to successfully advocate for the discipline.

Ron Wasserstein: Tell us about the goals of the ASA Caucus of Industry Representatives.

Ginger Holt: ASA believes members in academia and government are well supported by the organization—there are a lot of structures and venues in place for these, but we wanted something more specific for industry statisticians and data scientists. So, we created the ASA Caucus of Industry Representatives to provide a platform to address the unique challenges for industry statisticians and data scientists.

Some examples include promoting the profession of statistics and data science in the private and public sectors and then assisting companies employing those members in industry. And we want to provide a venue for discussion of unique issues for industrial data scientists and statisticians to facilitate interaction between both the private sector and the public sector. Different verticals within industry as a whole … we're data scientists, so we like to identify and collect data that are helpful to our employers and to industry in general.

We have a yearly meeting and workshops focusing on specific challenges such as large language models that may require a lot of input from this group in the future.

Ron Wasserstein: Amarjot, you've had many leadership roles within the ASA. What excited you about being part of the executive committee for the Caucus of Industry Representatives?

Amarjot Kaur: Being an industry statistician, I can identify with all the goals of this caucus. Also, having worked on various ASA committees and sections and in other leadership roles, I see this as an opportunity for the ASA to further strengthen two-way communication with representatives from a broad group of industries—to hear about issues and barriers for which the ASA might be able to help, provide resources, and further this initiative. So, it's a win-win situation!

ASA has always strived to help all sections of the membership—whether it's in industry, academia, or government—and it excites me that now there is a structured approach to move forward the interest of industry statisticians.

Donna LaLonde: One of the things I've enjoyed about the meetings with the executive committee and the town hall meeting you hosted was hearing more about what folks view as the challenges facing industry statisticians and data scientists. What do you think are the most significant challenges?

Amarjot Kaur: We are in a time of data revolution. There is so much data, and with that comes both opportunities and challenges. One thing for us to be prepared for is how best to synthesize this large amount of information in a meaningful way, without getting lost in it. You can always do a lot of

Ginger Holt

Amarjot Kaur

things with large data, but the question is, "Are we answering the right questions? Do we understand what we are doing?" It's important to incorporate all relevant information in an analysis but figure out first how best to do it in a meaningful way. We still need to pay attention to detail and be aware of the fundamentals of the analysis when working with a large volume of information.

Another challenge is automation. Automation is great for standard analyses, but when we deal with complicated problems, then I worry about too much automation as to how to interpret the results without completely understanding the intermediate steps. This is something to be aware of, and we need to make sure that we don't get completely carried away with automation.

Ginger Holt: I definitely agree with Amarjot. I've been working in forecasting basically my whole career in several different domains. In forecasting, the fundamental challenges are really the same everywhere; forecasting is pretty ubiquitous. And for context, I was in academia for a few years, but otherwise, I've been mostly at very large companies like BP, HP, Walmart, Facebook, and now Databricks. But in all these places, we needed unified forecasts across the company. So, standardized data sets, standardized methodologies, and having one source of truth for all decision-makers—whether that be in finance, sales, or marketing—and to make forecasts consistent across granularities.

When you compare forecasts at various levels, make sure the way they add up is consistent. We want as much accuracy as possible. We want 'explainability' for the answers we provide, so we can make actionable decisions.

And then scaling. Amarjot mentioned tooling. We want to scale the forecasting process or any process by building generalizable tooling there.

And Donna mentioned the town hall we had a few weeks ago now. We did collect some data from the participants, and we found we're targeting professionals as well as students for this caucus. And so, from the data collected during that meeting, we found that professionals really are interested in increasing collaborations across industries. So, I believe having these discussions and sharing knowledge across biomedical, financial, and manufacturing—all these different sectors—would be useful.

And then just knowledge sharing amongst the community of industry data scientists and statisticians. This is a major component. And continuing education of technical skills as we know, just like in the past six months, the amount of growth in LLM capabilities that we've seen. There's just such a need for people to learn more about what's been happening. And then students, as well. So, students are really interested in learning more about the career paths and journeys of statisticians and data scientists among different industries and crossover—being in one field and then moving over to more of a data science role from a nontechnical role. So, I believe people are very interested in that. The caucus is going to be focusing on these issues and looking for ways to provide additional support to our community.

Ron Wasserstein: You can't get around discussions of ChatGPT and LLMs. They're everywhere. What are your thoughts about these models, and what changes do you see on the horizon as a result?

Ginger Holt: Fortunately, at Databricks, we have a lot of customers using our platform. We just published a report on the status of data in 2023, and we can safely say that we are in the golden age of data and AI. So, we believe that AI is really going to usher in the next generation of products and software innovation. We're already seeing this play out in the market.

This report was based on data from 9,000 of our customers. And so, three main takeaways from the report are companies are adopting machine learning and LLMs at a rapid pace. Natural language processing is really dominating those use cases, with an accelerated focus on LLM specifically.

The second thing is that open source is winning in today's data and AI markets. So, eight out of 10 of our most widely adopted data and AI products are based on open source. That's good to know. I see a lot of leaderboards out there ranking different LLM products, and they rank them on accuracy and categorize them based on open source or not open source, and then if they're allowed for commercial use or not. And so, if you look at those leaderboards, the biggest takeaway is that open source is catching up quickly. Companies are seeing the benefit of keeping their data private, not giving their data to open AI or other LLMs, and training their own models based on their specific use cases, their own data, and their domain.

And the biggest challenge here is the 'hallucination' issue. AI is sociopathic, right? It can lie to your face without feeling bad. We need to figure out how to prevent this from happening. People

have been actively researching this. Improving the diversity of training data, eliminating inherent biases that may be present, developing better regularization techniques, employing adversarial training, and reinforcement learning—things like that. So, that's a big problem to solve before we have more reliability, but it's definitely going to change the way we work and add efficiency to what we do.

Amarjot Kaur: So, there [is value] in using these AI tools, and I can see that in my workplace. For example, the drug discovery phase requires an extensive search for identifying promising molecules to take forward, where AI and machine learning–type tools could be useful in selecting drug candidates in a more precise and efficient way. There are many other applications where one can see the value of AI and machine learning.

On the other hand, AI can have a hallucination effect, as Ginger mentioned, and it could give totally wrong answers. So, you can't just rely on it completely, without human oversight, even though the answer is based on a lot of information.

One parallel I think of [with] AI is that of a navigation system in our cars. Navigation is an extremely useful tool, and we all have so much dependence on it but, at the same time, we also have to look at the signs on the roads. There can be new signs or roads not recognized by the navigation system and, if you only pay attention to the navigation system, you may get lost.

There are a lot of unknowns [about] AI and, if you hear the news or read about it, some very smart people are really worried about where it is going and what's going to be its impact in the long run. But again, opportunities are there, as well. I believe that's how things move forward—there's always a hesitation in the beginning. Hopefully, there will be boundaries and regulations within which people can make the best out of it.

Ron Wasserstein: What would you say is your best career advice?

Amarjot Kaur: Stay curious! Stay curious and be adaptable to change because life is changing, and it never moves in a straight line. As I said earlier, before jumping into finding solutions, first try to understand the question. What is it that we are trying to answer, and how can we best answer it? The best answer doesn't always have to be the complicated one. Curiosity and adaptability are important.

It's also important to take ownership of what you do. Whatever task is assigned, no matter how big or small, we should think beyond what has been asked, think independently, and try to see what more we can learn from that data.

My final words of advice to everyone are to volunteer and stay professionally active within ASA or any other organization of your interest. I have found volunteer activities personally rewarding and a fulfilling part of my career. Volunteerism helps us learn new things and develop and diversify our worldview through broader professional exposure.

We are in a time of data revolution. There is so much data, and with that comes both opportunities and challenges. One thing for us to be prepared for is how best to synthesize this large amount of information in a meaningful way, without getting lost in it.

Ginger Holt: I echo many of the things that Amarjot said about being adaptable to change. Applying that to your career takes a model, predictive-control–type of approach—like planning a career for the long term and then letting three to six months go by and doing another pass. Make changes based on the new information you have, new interests, new developments in the field, and new knowledge that you may have. So, be intentional about setting a deadline around your career planning.

Have a policy of having research heroes that you follow on Google Scholar and keep up to date with advancements. Maintain your interest in these people. Keep your standards high. Imagine those people looking over your shoulder as you're doing your work and delivering analysis. What would they think of your work?

Staying active in conferences. Keep learning! That would be my advice. ■

NSF CORNER

Q&A Offers Additional Funding Insight

To strengthen the connection between the statistical community and National Science Foundation, we continue the series introduced in the May 2023 issue of Amstat News *that poses questions to NSF program officers and awardees. If you have questions or comments for the program officers, send them to ASA Director of Science Policy Steve Pierson at* pierson@amstat.org.

Yulia Gel

Yong Zeng

Jun Zhu

Program Directors

NSF Statistics Program Directors **Yulia Gel**, **Yong Zeng**, and **Jun Zhu** collectively responded to the following questions. Zeng, from the University of Missouri-Kansas City, is a second-year permanent program director of the Division of Mathematical Sciences in the NSF Directorate for Physical and Mathematical Sciences. Gel, from The University of Texas at Dallas, and Zhu, from the University of Wisconsin-Madison, are in their third and second years, respectively, as rotator program directors of the statistics program. Zeng served in the Division of Mathematical Sciences from 2015–2018 and 2019–2021.

How can researchers from different universities work together on a project and jointly submit a research proposal to NSF?

NSF offers a means called "Collaborative Proposals" to allow investigators from two or more organizations to collaborate on a unified research project. NSF provides two methods for collaborative research proposals to be submitted. One is to request a single award with subawards to the non-lead organization(s) administered by the lead organization. The other is that different organizations, where one is lead and the other non-lead, simultaneously submit proposals, each requesting a separate award. All collaborative proposals must clearly describe the roles to be played by all organizations, specify the managerial arrangements, and explain the advantages of the multi-organizational effort within the project description.

More information can be found in the *NSF Proposal & Award Policies & Procedure Guide*, Chapter II: Proposal Preparation Instructions, Section E.3. Below are excerpts providing synopses of each method:

- **Submission of a collaborative proposal from one organization.** The single proposal method allows investigators from two or more organizations who have developed an integrated research project to submit a single, focused proposal. A single investigator is primarily responsible for the administration of the award and discussions with NSF, and, at the discretion of the organizations involved, investigators from any participating organizations may be designated as co-PIs.
- **Submission of a collaborative proposal from multiple organizations.** Simultaneous submission of proposals allows multiple organizations to submit a unified set of certain proposal sections, as well as information unique to each organization as specified below. All collaborative proposals arranged as separate submissions from multiple organizations must be submitted via Research.gov. For these proposals, the project title must begin with the words "Collaborative Research."

Awardee

Jessi Cisewski-Kehe is an assistant professor in the department of statistics at the University of Wisconsin-Madison. She completed her PhD in statistics from The University of North Carolina at Chapel Hill, and then joined the department of statistics at Carnegie Mellon University followed

by the department of statistics and data science at Yale University. Her primary research interests are astrostatistics and topological data analysis.

Cisewski-Kehe has received funds through the NSF Astronomy and Astrophysics Research Grants program and submitted NSF proposals to a variety of programs as a PI and co-PI. She also participated on an NSF selection panel.

What NSF non-DMS entity funded or contributed, and how will funding be used?

Unmasking Stellar Variability: Hierarchical Bayesian Methods for Characterization of Low-Mass Planets with EPRV Spectroscopy is funded by the NSF's Division of Astronomical Sciences with the goal of developing statistical methodology to detect and characterize low-mass exoplanets (such as Earth analogs) in the presence of stellar variability. Eric Ford of Penn State is the co-PI; Lily Zhao of the Center for Computational Astrophysics is a collaborator; and Joseph Salzer of the University of Wisconsin-Madison is a statistics PhD student involved in the research. This three-year grant is funded for $511,163, which primarily covers tuition and a stipend for a statistics PhD student and astronomy PhD student.

What will this proposal accomplish?

The radial velocity method is one of the most successful approaches for detecting exoplanets and seeks to detect the movement of a star due to any possible orbiting planets. All else equal, a more massive orbiting planet produces a bigger wobble and stronger signal, making it easier to detect. However, the goal is to uncover the population of low-mass exoplanets such as Earth analogs. The newest generation of spectrographs can uncover tiny signals left by these desirable low-mass exoplanets. However, the instruments are also sensitive to sources of variability in the atmosphere of stars, which can produce time-varying signals that hide or mimic planetary signals and lead to missed or false detections. We are developing statistical modeling techniques to overcome the non-planetary sources of stellar variability to obtain clean radial velocity estimates.

If an NSF non-DMS entity partially or fully funded the award, describe your approach to that entity so others might learn from it.

This award is funded by the NSF's Division of Astronomical Sciences. When submitting proposals to a non-DMS entity, it helps to focus the goals and results on the impact of the relevant scientific domain and to have close domain collaborators join the proposal. I am fortunate to have long-term astronomy collaborators who contributed their expertise to the writing of the proposal and execution of the research goals.

What advice do you have for others applying for NSF funding?

Get started writing right away, as it takes longer than you might expect. Make sure your research aims, goals, and explanations are clear and understandable to the likely reviewers. If the reviewers do not understand your plans, they are unlikely to give your proposal high ratings. Be sure to emphasize why your proposed research is important and relevant.

It is OK if your proposal is not funded. You can make updates based on the feedback from the reviewers and program officer and resubmit to a future program. Under many circumstances, it can be easier to update a rejected proposal than write a new one from scratch. ■

Jessi Cisewski-Kehe

MORE ONLINE
To view other Q&As in this series, visit *Amstat News* online at *magazine.amstat.org/blog/category/nsf-corner*.

STAT*tr@k*

Eric Daza Innovates Health Care Industry

Eric J. Daza

Photo courtesy of Monica Semergiu (*monicasemergiu.com*)

It is not uncommon for students to have fixed mindsets about statistics. Many people don't realize how much they love data until they take their first statistics class. This was the case for Eric J. Daza, a biostatistician and health data scientist with more than two decades of experience who, throughout his educational and professional experiences, also learned statistics can be a philosophical framework for life.

Among his accomplishments, Daza has contributed to the evolution of personalized health data analysis. His work at Evidation Health and *Stats-of-1* demonstrates how data scientists and statisticians can change the world for the better.

Daza is also at the forefront of the American Statistical Association's efforts to improve diversity and inclusion practices across the profession as the professional development chair of the ASA's Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group.

We caught up with Daza to learn about his passion for biostatistics; the difference his work makes in health care; and his work advocating for justice, diversity, equity, and inclusion in the field. Take a look at what he had to say.

Q: Did you always want to study statistics?

A: I was a biology major and didn't discover statistics until the end of my undergrad years. I loved it, but it was too late to change my major because I was graduating. So, I ended up getting a master's in statistics and then, later, a doctorate in it. My journey to statistics was pretty much by accident.

I actually sucked at statistics as an undergrad! Throughout college, I struggled not only with statistics but also my major, biology. This was more a reflection of my inability to stay focused than a lack of interest.

I'm pretty sure I ended up taking Introduction to Statistics at least three times, until it finally stuck years later during my biostatistics doctoral program. Biostatistics, by the way, is a misnomer (in this biologist's opinion), because it involves very little biology and a *lot* of math!

Q: How has statistics informed your work?

A: I work as a biostatistician and health data scientist at Evidation, a digital health company. We're on a mission "to create new ways to measure and improve health in everyday life."

I code almost exclusively in R, using Jupyter notebooks running on a cluster. I like learning Python but really only do so whenever I have to modify another analyst's Python code to complete a project. This method of learning works well for me. I also code in SQL from time to time.

For task coordination, I use project and task management enterprise software. These tools help me track progress on action items for myself and my teammates, collaborate and communicate in a way that is time-stamped and auditable, and tighten up project management and coordination.

I also rely on standard operating procedures for streamlining analysis planning and execution, data and code review, and data and report delivery. I use company templates to write study protocols, data management plans, and statistical analysis plans—just like I did when I worked as a biostatistician in the pharmaceutical industry.

When I am challenged as a statistician to balance statistical rigor with time management, I always try to enforce good statistical hygiene to prevent *p*-hacking, hypothesizing after the results are known (HARKing), overfitting, overgeneralizing, or being too statistically confident with too-small confidence intervals.

At my independent newsletter, *Stats-of-1,* my co-editors and I are on a mission to "promote the expanded use of n-of-1 trials, single-case designs, and other individual-focused (personalized/precision) statistical approaches in health and medicine." It's been getting attention; *Stats-of-1* was recognized by both *Forbes* and *Fortune* in 2022! This work also resonates with what we do at Evidation, so I'm lucky to have this really nice synergy between my day job and 'extracurricular' work.

Statistics has really helped structure how I think of ideas going into an analysis and how to be really careful with drawing inference—being really careful about not being too confident in what you find. That's really, for me, what statistics brings. It's a

framework for scientific inquiry. It's not just numbers and plug-and-chug.

Q: What do you wish people knew about statistics?

A: If you wish to pursue a career in statistics or data science, you have to be a generalist, rather than a specialist. Unless you are hired into a specific technical role such as a biostatistician or machine learning engineer, you should seek to develop general statistics and/or data science skills.

As a generalist, you will be able to manage several client projects that may include vague requests by dissecting and helping to clarify, so everyone can focus on the client's exact underlying goals. By acting as a translator for your clients, you can learn how to present technical language in a comprehensive way to both technical and nontechnical audiences.

Nonstatisticians—myself included when I don't have my hat on—think statisticians are about the numbers. They see us on the news—and old newsreels will have us typing on a calculator. We're actually a lot more about the symbols that represent the numbers and how those symbols interact to help explain something about the world. So we're not actually number crunchers. We're more like symbol crunchers!

Q: Tell us about the ASA JEDI program.

A: JEDI—which stands for Justice, Equity, Diversity, and Inclusion—is an ASA outreach group. We've been around for about two years, but the group started forming before that.

Our main goal is to foster those principles in the professions of statistics and data science. On a day-to-day basis, we help groups already doing deep work in different segments of the ASA. For example, the Committee on Minorities in Statistics connects to other groups doing similar work to JEDI but in a different area of our association.

The second line of projects we do is developing educational or didactic videos and training for folks such as department chairs and industry leaders. These resources provide information about how to equitably write promotion letters, advocate for employees seeking promotion, and write referral letters for employees applying to a different company.

I'm both a member of JEDI and the ASA. Being a member of the ASA helps me keep up with developments in the statistics profession. It also helps me grow my network of colleagues. An ASA membership also provides discounts for ASA events like the Joint Statistical Meetings, so there are financial benefits.

That said, any organization requiring a paid membership to receive benefits needs to be aware of how it may be systematically excluding groups of people from those benefits. This includes opportunities to network, which are so important to professional development.

Q: What advice would you give to future statisticians and data scientists?

A: If you are a young professional about to enter the professions of statistics and data science, you should know the following two things:

1. We are guardians of the scientific method.
2. Being a statistician is awesome.

We are responsible for recognizing sources of uncertainty in data collection and analysis and quantifying their impact on the strength of scientific conclusions to set our research collaborators up for success.

As the field of data science continues to grow, it is crucial that we clearly explain our epistemological role to nonstatistician colleagues. We must clearly demonstrate the value our role brings to data science—not as competitors, but as partners, collaborators, and practitioners.

Remember, your job is to help your collaborators succeed by understanding and managing their expectations around the type and strength of their evidence—what their data, assumptions, and hypotheses (including models) together can and cannot say.

Check out the full *This*IsStatistics video interview with Daza at *bit.ly/48ktCzu*.

To learn more about the JEDI outreach group, visit *datascijedi.org*. ■

MORE ONLINE
Learn about improving access to the profession at *bit.ly/3Zp9PL5*.
Also, check out Daza's newsletter at *statsof1.org*.

STATS4GOOD

2023 Peace Award Honors COVID Researcher with Global Impact

David Corliss is the principal data scientist at Grafham Analytics. He also serves on the steering committee for the Conference on Statistical Practice and is the founder of Peace-Work.

Mukherjee accepts the Fellows Award from 2012 ASA President Bob Rodriguez at the Joint Statistical Meetings in San Diego, California. Photo by Eric Sampson/ASA

Bhramar Mukherjee
Photo by Benjamin Weatherston

Bhramar Mukherjee of the University of Michigan was recently honored with the 2023 Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society, recognizing her commitment to and accomplishments in biostatistics on a global scale. While Mukherjee has worked in many areas of biostatistics, her research and leadership during the 2021 COVID surge in India brought her widespread attention.

Mukherjee serves as chair of the biostatistics department at the Michigan School of Public Health, where she has been a professor of epidemiology and global public health since 2006. She was recently named a distinguished professor in recognition of her COVID research and team leadership, contributions to biostatistics generally, and diversity leadership. Her work encompasses a wide area in biostatistics but centers on public health issues. Much of this work has been

in cancer research, such as screening, prevention, and public health risk and outcomes. She has also published extensively on environmental health and epidemiology. Her statistical work is diverse, including the development of statistical methods for electronic health records, Bayesian statistics, and shrinkage estimation.

I became familiar with Mukherjee's COVID research through a shared interest in the broader impacts of the pandemic. For example, both of us presented in the ASA / *Journal of Data Science* webinar series, "Data Science in Action in Response to the Outbreak of COVID-19," in the summer of 2020—she on the impact of the national lockdown in India and me on economic impacts and opportunities for statistical volunteering. A consistent thread running through her multidimensional work as a statistician is serving the public by driving better health outcomes.

Mukherjee's work in biostatistics with electronic health records led to a partnership on big data best practices with the Michigan Institute for Data Science, which I mentioned in this column in September for their work promoting ethical AI. This reflects both a need to develop the data science and computing practices needed to leverage big data for the greater good and to engage in community partnerships that turn statistical science into beneficial action.

In learning more about Mukherjee's work while writing this column, I noticed a consistent theme in her comments and writing for the public. She never mentions the work she leads as hers, but instead emphasizes the accomplishments of her entire team. This recognition of team effort is of critical importance in all areas of science but especially in our shared work for the public good. Mukherjee leads in both innovative scientific research and in showing us how science should be done: collaboratively, recognizing the contributions of all and partnering with people in public policy and public service to do the most good.

The COVID pandemic was a once-in-a-lifetime event that fundamentally changed how science is done. The need for a rapid response to the pandemic resulted in many more collaborations, producing a vast number of papers and accelerated processes for review and publication. In the crucible, research leaders like Mukherjee led a quieter, less publicized revolution in how we as statisticians and data scientists serve the public. Her team played a vital role in tracking and modeling the COVID pandemic in India. This work went beyond peer-reviewed scientific research to develop action plans, advise political leaders, and inform the public.

The vision of a larger role of statistical science driving better outcomes for society is at the heart of the work recognized by the Karl E. Peace Award. Mukherjee and her team are honored by the award and we, as a statistical community, are honored to have their work guide and strengthen our own. ■

Getting Involved

In opportunities this month, Stats4Good is looking for outstanding Data for Good work performed during 2023 to honor in the December issue. In January, I provided a Challenge List of the following five areas of significant need and opportunity in #DataForGood:

- Biostatistics: Leveraging COVID Learnings
- Environmental Advocacy: Climate Change
- Data: Unique and Secure Identifiers
- Organization and Infrastructure: More Project Managers
- Human Rights: Critical Race Theory as a Statistical Practice

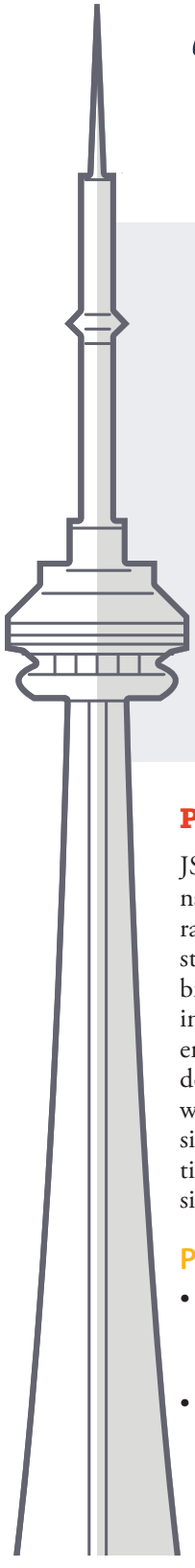
Now I am looking for *your* input on the most outstanding work in these areas for this year. You can email me at *davidjcorliss@gmail.com* or contact me through the ASA Community (*https://community.amstat.org*), where this will also be posted.

MORE ONLINE
View the D4G Challenge List at *bit.ly/3RkXR3k.*

Learn more about the Karl E. Peace Award at *bit.ly/3PmuESX.*

Building a STRONGER COMMUNITY at JSM2023

Hao Helen Zhang, 2023 JSM Program Chair



The 2023 Joint Statistical Meetings—held in Toronto, Ontario, August 5–10—attracted more than 6,000 participants from academia, industry, and government and served as a platform for intellectual exchange, business discussion, friendship building, and networking.

This years' scientific program featured more than 600 diverse sessions, including technical presentations, panel sessions, lectures, posters, and roundtable discussions. They showcased the latest trends and daily practices of statistics and data science, from groundbreaking research and educational strategies to career development and community outreach efforts.

Plenary Talks and Lectures

JSM 2023 featured four plenary talks and 10 named or award lectures. They spanned a wide range of topics on the foundations of statistics, statistics methods for health and medicine, big and high-dimensional data analysis, causal inference, measurement errors, Bayesian inference, small area estimation, random forests, deep learning, and generative models. There were also presentations and interactive discussions on trustworthy AI, robust and differential privacy, and JEDI [justice, equity, diversity, and inclusion].

Plenary Talks

- ASA President's Address and Awards, Dionne Price, "Our Mission in Action: Past, Present, and Future"
- ASA President's Invited Address, Robert Santos, "Serving Through Leadership: My Approach to Heading a Federal Statistical Agency"
- COPSS Awards and Distinguished Achievement Award and Lecture, Bin Yu, "Veridical Data Science Towards Trustworthy AI"
- IMS Presidential Address, Peter Buhlmann, "IMS: What Does It Stand For? What Could It Stand For?"

Named and Award Lectures

- Wald Lecture, Bin Yu, "Seeking Boolean Interactions in Biomedicine and Proofs" (I) and "Sparse Dictionary Learning and Deep Learning in Practice and Theory" (II)
- Deming Lecture, Malay Ghosh, "Small Area Estimation: A Personal Perspective"
- Grace Wahba Lecture, Wing-Hung Wong, "Causal Inference by Encoding Generative Modeling"
- David R. Cox Foundations of Statistics Award Lecture, Nancy Reid, "The Importance of Foundations in Statistical Science"

ASA President Dionne Price delivers the 2023 ASA President's Address. Eric Sampson/ASA

US Census Bureau Director and former ASA President Rob Santos speaks during the ASA President's Invited Address. Olivia Brown/ASA

Wing-Hung Wong presents the 2023 Grace Wahba Lecture. Meg Ruyle/ASA

- Medallion Lectures
  - Ingrid Van Keilegom, "Copula-Based Cox Proportional Hazards Model for Dependent Censoring"
  - Runze Li, "Feature Screening for Ultra-High Dimensional Data: Methods and Applications"
  - Yingying Fan, "High-Dimensional Random Forests Estimation and Inference"
  - Aurore Delaigle, "Measurement Errors in Diet and Nutrition"
- Blackwell Award Lecture, Ya'acov Ritov, "Minimax vs. (Empirical) Bayes Prediction"
- Florence Nightingale David Award Lecture, Karen Bandeen-Roche, "More Than Freedom from Disease: A Quest to Determine 'Health'"

Introductory Overview Lectures

There were five well-attended introductory overview lectures on a range of emerging topics of interest in statistics, including computational social sciences, astronomy statistics, interpretable machine learning, randomized clinical trials with surrogate markers, and genome risk prediction.

On Sunday, Stephanie Eckman of the University of Maryland organized an IOL on computational social science to diverse fields. James Cochran of the University of Alabama, Sali Tagliamonte of the University of Toronto, and Monica Alexander of the University of Toronto presented applications of quantitative social science methods in political science, linguistics, and sociology, respectively.

On Monday, David Hunter and Hyungsuk Tak of The Pennsylvania State University invited experienced astronomers at the interface of astronomy and statistics to introduce and showcase their astronomical science and data-analytic challenges. Joel Leja of The Pennsylvania State University, Jo Bovy of the University of Toronto, Eric Feigelson of The Pennsylvania State University, and Kaisey Mandel of the University of Cambridge discussed statistical challenges in the deep universe, the formation of the Milky Way, detecting exoplanets, and supernova cosmology, respectively.

Aurore Delaigle presents her Medallion Lecture. Meg Ruyle/ASA

Bin Yu delivers one of her two Wald Lectures. Olivia Brown/ASA

JSM attendees and panelists participate in a late-breaking session about ChatGPT. Meg Ruyle/ASA

The third IOL took place Tuesday and featured Cynthia Rudin and Alina Barnett of Duke University, who gave an overview on fundamentals of interpretable machine learning and discussed fundamental principles for interpretable machine learning, recent research in the area, and common misunderstandings that dilute the importance of this topic.

On Wednesday, Lu Tian of Stanford University and Layla Parast of The University of Texas at Austin provided a survey of randomized clinical trials with surrogate markers. They introduced basic concepts of surrogate markers and surrogacy within a rigorous statistical framework, how to evaluate the strength of surrogate markers, and how to use the surrogate markers to assist the conduct of randomized clinical trials.

On Thursday, Indranil Ghosh of the University of North Carolina Wilmington organized an IOL titled "Genomic Risk Prediction: Algorithms, Fairness, and Applications." Nilanjan Chatterjee of Johns Hopkins University introduced the concepts of genetic risk prediction in the context of large-scale, genome-wide association studies and cutting-edge methods of polygenic-risk scores and applications.

Late-Breaking Sessions

JSM featured two late-breaking sessions this year. One session, "It Takes More Than a Village: Capacity-Building Efforts for the Statistical Community," was organized by Tian Zheng of Columbia University and David Banks of Duke University and chaired by Katherine Ensor of Rice University. This session was timely, as there is a great need for the statistics and data science communities to propose mathematical sciences research institutes in response to the National Science Foundation. The panelists highlighted the importance and urgency of a statistics-led institute in the era of big data and provided advice to potential proposers.

The second session, "ChatGPT: Job-Killer, Flash in the Pan, or a Statistician's Best Friend?," included a panel of experts in AI and statistics from academia, industry, and government. They provided their perspectives on the implications of large language models such as ChatGPT for the practicing statistician. They also discussed ethical issues and the use of large language models as statistics education tools.

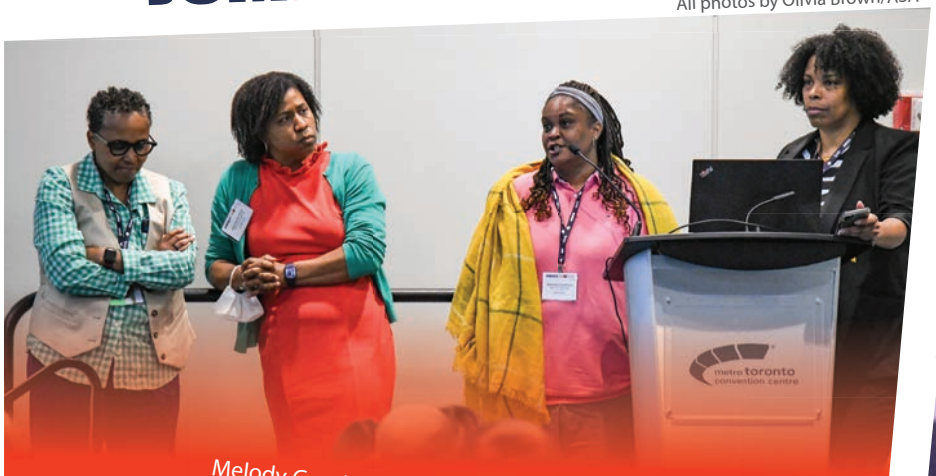
Memorial Lectures

During every JSM, we memorialize statisticians who made a major contribution to our field and recently passed away. This year, we remembered and celebrated the lives of Jerry Sacks, James J. Filliben, Thomas B. Jabine, and Tze Leung Lai.

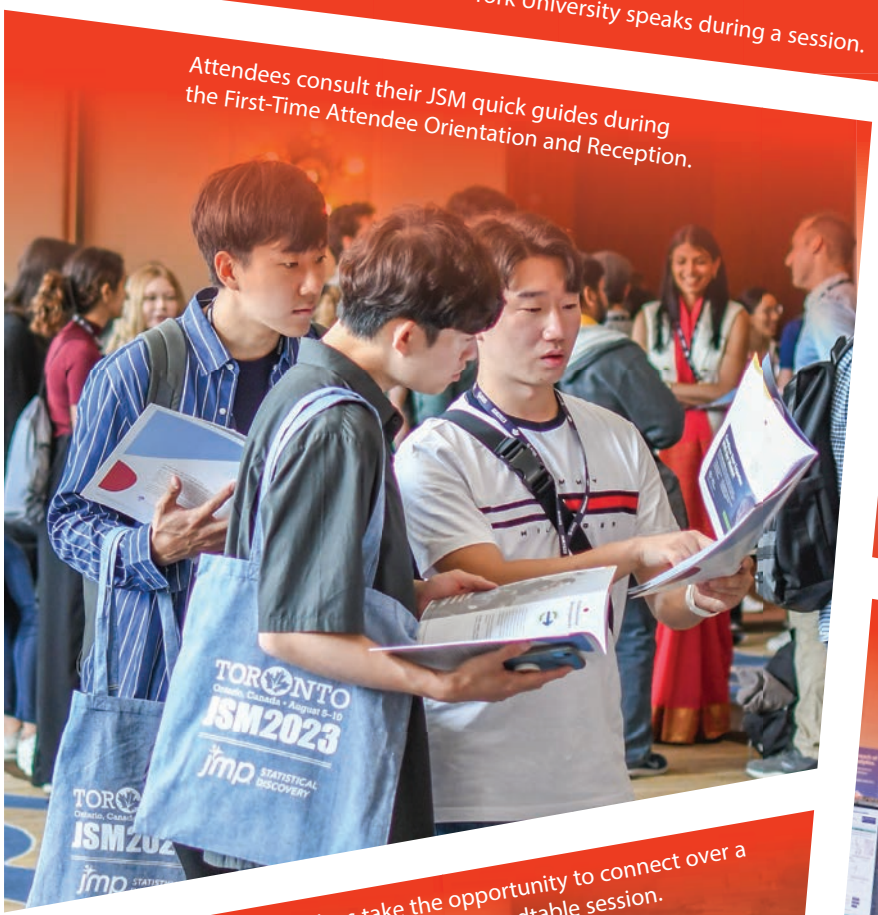
The success of JSM 2023 is a testament to the collective efforts and dedication of numerous societies and individuals. Serving as the program chair was an incredibly rewarding experience for me. I enjoyed working with many of you and, together, we are forging a stronger community. I strongly encourage you to become actively involved in future JSMs in any capacity. I look forward to seeing you at JSM 2024 in Portland, Oregon. ■

JSM2023 in Photos

All photos by Olivia Brown/ASA



Melody Goodman of New York University speaks during a session.



Attendees consult their JSM quick guides during the First-Time Attendee Orientation and Reception.

Attendees take the opportunity to connect over a casual meal during a roundtable session.

Student attendees network and catch up at the JSM Student Mixer.

JSM attendees show off their moves at the perennial favorite, the JSM Dance Party.

JSM attendees mingle and peruse the poster presentations at the Opening Mixer.

Committee of Presidents of Statistical Societies

Honors Top Statisticians

Maya Sternberg, COPSS Secretary/Treasurer

COPSS award winners (from left): Ryan Tibshirani, Bin Yu, Karen Bandeen-Roche, and Michael Kosorok

Eric Sampson/ASA

MORE ONLINE
Learn about COPSS award criteria and nominating procedures at *community.amstat.org/copss/awards.*

Read about the Emerging Leader Award winners at *bit.ly/3EJxtlP.*

For a look at all the ASA award winners honored at this year's JSM, view the 2023 Awards Book at *bit.ly/46bDz08.*

The Committee of Presidents of Statistical Societies honored four statisticians at the 2023 Joint Statistical Meetings in Toronto, Canada, on August 9. These awards are jointly sponsored by the COPSS founding partner members: American Statistical Association; Institute of Mathematical Statistics; Eastern and Western regions of the International Biometric Society; and Statistical Society of Canada.

The winner of the 2023 COPSS Distinguished Achievement Award and Lectureship is **Bin Yu** from the University of California, Berkeley. This award recognizes meritorious achievement and scholarship that has a significant impact on the field of statistical science. The award citation recognized Yu for "fundamental contributions to information theory, statistical and machine learning methodology; for interdisciplinary research in fields such as genomics, neuroscience, remote sensing, and document summarization; and for outstanding dedication to professional service, leadership, and mentoring of students and young scholars."

The winner of the 2023 Presidents' Award is **Ryan Tibshirani** from the University of California, Berkeley. This award is presented annually to a young member of one of the COPSS participating societies in recognition of outstanding contributions to the profession. The award citation recognized Tibshirani for "contributions to nonparametric estimation, high-dimensional inference, and distribution-free inference; for the development of new methodology; for contributions at the interface of statistics and optimization; and for the development of methods for epidemic tracking and forecasting."

The winner of the 2023 George W. Snedecor award is **Michael Kosorok** from The University of North Carolina at Chapel Hill. This award is presented biennially (odd years) to recognize an individual who has been instrumental in the development of statistical theory in biometry with a noteworthy publication in biometry within three years of the date of the award. The award citation recognized Kosorok for "foundational, creative, and original contributions to mathematical statistics; for methodological developments in empirical processes and machine learning; for advancement of precision health; and for mentoring of students, postdocs, and junior faculty."

The winner of the 2023 F.N. David award and Lectureship is **Karen Bandeen-Roche** from the Johns Hopkins Bloomberg School of Public Health. This award is presented biennially (odd years) to recognize an individual as a role model to others by their contributions to the profession through excellence in research, leadership of multidisciplinary collaborative groups, statistics education, or service to the professional societies. The award citation recognized Bandeen-Roche for "outstanding leadership and service in the biostatistics and statistics community; for her leadership in statistical education; and for her achievements in biostatistical research, particularly in the field of aging research and frailty."

There were also eight winners of the Emerging Leader Award, formerly known as the COPSS Leadership Academy Award. These awards recognize early-career statistical scientists who show evidence of and potential for leadership to shape and strengthen the future of the statistics field. The 2023 winners are the following:

- **Yates Coley**
- **Lorin Crawford**
- **Peng Ding**
- **Edgar Dobriban**
- **Jingyi Jessica Li**
- **Avi Feller**
- **Veronika Rockova**
- **Gongjun Xu**

A Word with COPSS President's Award Winner Ryan Tibshirani

What was your first reaction to winning the prestigious COPSS President's Award?

Big surprise! Needless to say, I am very humbled and very grateful to my nominators.

What made you choose to work in the statistics field?

I found my way to statistics due to a mix of being inspired by my dad (who is also a statistics professor) and being drawn to the field by my own interests and inclinations. I studied math and computer science as an undergraduate and became interested in statistics through summer internships in biology labs connected to my dad's applied collaborations. There, I learned the basics of data analysis 'on my feet.'

Initially, my interests in statistics were entirely applied. Eventually, I became aware of how broad the field of statistics is and that being a statistician would allow me to pursue applied, methodological, computational, or theoretical questions—any of this is fair game.

Of course, it didn't hurt that my impressions of statisticians based on those I knew (my dad, Trevor Hastie, Jerry Friedman, and a few others) was that they are an open, curious, and fun crowd. It was then a pretty easy choice to go to graduate school in statistics.

Which part of your job do you like the most?

There is a lot to like. As much as professors might like to grumble on occasion (Who doesn't?), being a professor is a pretty amazing job. One of the most important aspects to me is intellectual freedom—having the complete freedom to pursue what you want. The way I look at it is the motivation behind doing research is multi-dimensional: one axis measures importance, another measures beauty. Sometimes I pursue things because I find them important and other times because I find them beautiful or interesting. Of course, this is not to say that everything I work on succeeds in being important and/or beautiful. These are just landmarks. The point is that I get the freedom to choose my own approach.

Here are a few other things I like about being a professor:

- Advising students—this can often be a special relationship, and watching your student develop and grow can be really rewarding.
- Teaching—for me, this has actually been one of the best ways to deepen my own understanding and appreciation of various topics and subfields.
- Collaborating—I have been incredibly fortunate with my collaborators so far. Many of my collaborators have become close personal friends, people I would like to continue working and hanging out with for the rest of my life. How lucky I am to have this job?

What advice would you give to young people entering the profession as PhD students or assistant professors at this time?

That is a tough one. There is a lot that comes to mind, but I will just share one idea. I have seen too many people in academia become distressed and unhappy for long periods, including people I saw at one point as persistently positive. A younger version of me would say, "That won't happen to me," and carry on as usual, trying not to think too much about it. But my advice is now this: Think carefully about your "value function." That is, what are you using to measure the value of your work and output (broadly interpreted) to derive a sense of fulfillment and happiness? This can be highly individual, but I believe it is worth thinking about explicitly, and it is never too early to start.

Here are two things that are meaningful to me and have been helpful for me to identify and keep track of: local impact and mutual respect.

The first refers to the impact I have on my students, collaborators, and so on—the people I interact with regularly. I look for evidence that I

am contributing positively to these 'local' relationships. This makes me happy and is more under my control than, say, where my paper gets published or whether it is cited a lot.

The second refers to the following. I start by identifying the people I really respect. For some subset, I will be lucky enough to be able to develop a relationship with them (e.g., work with them). Over time, I look for signs I may have earned their respect. Such signs can be really special.

Think carefully about your "value function." That is, what are you using to measure the value of your work and output (broadly interpreted) to derive a sense of fulfillment and happiness? This can be highly individual, but I believe it is worth thinking about explicitly, and it is never too early to start.

Who are your most significant mentors? How did/do they impact your career?

At Stanford (where I was a PhD student): my dad, Trevor Hastie, Jonathan Taylor, and Emmanuel Candes. At Carnegie Mellon (where I spent the first 11 years of my faculty career): Larry Wasserman, Roni Rosenfeld, and Chris Genovese.

I can say a lot about each one and their impact. For Trevor, Jon, Emmanuel, Roni, and Chris, these thoughts will have to be saved for private conversations between us. For my dad and Larry, I will just share a few words.

My dad's 'scientific common sense' is second to none. I've always said to myself that if I found myself working on an applied problem of critical importance and I could bring one stats collaborator to the table with me, it would be my dad.

Larry might be the closest person we have in statistics to a 'universalist.' The breadth of topics he understands (not superficially, but deeply) truly amazes me.

I have learned so much from each of them, well beyond statistics. They have both accomplished so much and yet are still so kind and generous to everyone around them. Also, they still know how to have fun and remain young at heart.

Why were you drawn to statistical machine learning?

I think there are a few reasons. First, I am genuinely interested in computer science and optimization outside of statistics, so it was natural for me to be drawn to machine learning. Second, ML is a fun, young field full of excitement, and this excitement can be contagious. Third, being at Carnegie Mellon had a big influence on me in this regard. Though I was hired by the department of statistics, the people in the machine learning department were welcoming from day one, and I eventually became jointly appointed in statistics and machine learning. I am actually unsure of whether this would have happened anywhere else. At Carnegie Mellon, statistics and ML are very close and collaborative. At the start of my career, I was interested in ML but didn't have much experience or credibility as an ML researcher. Still, the ML people welcomed me and helped nurture my interests. It was wonderful and quite formative for me.

What are your hobbies/interests beyond statistics?

Spending time with my family—I have two amazing little kids and a wonderful wife—whether it be at home or on family trips. In terms of current activities, I am mostly biking, swimming, and playing the occasional sport. I played various sports growing up and still like to dabble. I love music and wish I had more time for it. I wish I had more time for reading books, too. Maybe I will make more time for music and books in the future. ■

ASA Honors Founders, Inducts 47 Fellows

A special feature of the Joint Statistical Meetings is the ASA President's Address and Awards, during which the Founders Award winners are announced and the new ASA Fellows are inducted.

The **Founders Award** recognizes members who have rendered distinguished service to the association. Those selected have served the association for an extended time, usually in a variety of leadership roles wherein effective service or leadership was provided within the ASA or through ASA outreach to other organizations. The following are being honored in 2023 for rendering distinguished service to the association:

Karen Kafadar

University of Virginia

For nearly 30 years of service to the ASA, including serving as council representative for the Colorado-Wyoming Chapter, editor of *Technometrics*, JSM program chair for the Section on Physical and Engineering Sciences, and chair of the Section on Statistical Computing on two separate occasions; for service on nine ASA committees and task forces, including outstanding leadership on the Forensic Science Advisory Committee and Climate Change Advisory Committee; for two terms as a member of the Committee on Publications and two terms on the ASA Board of Directors as publications representative; and for outstanding leadership as the 2019 ASA president.

Amarjot Kaur

Merck & Co.

For thoughtful financial leadership of the ASA, including service on the Development Committee, Investments Committee, and ASA Board of Directors as treasurer; for service on the Committee on Fellows, Deming Lectureship Committee, Committee on Applied Statisticians, and Membership Growth Working Group; for leadership in launching the Council of Industry Representatives; for enhancing connections between the ASA and International Indian Statistical Association during presidency of that association; and for relentless interest in ensuring that diverse voices are heard and contribute to the success of the ASA.

Mary J. Kwasny

Northwestern University

For leadership of ASA chapters—including long and outstanding service to the Chicago Chapter, having taken on nearly every leadership role for that chapter—serving as chair of the Council of Chapters Governing Board, and serving on the ASA Board of Directors as Council of Chapters representative; for helping create the Harry V. Roberts Award and leading the award committee; for serving as publications officer for the Section on Statistical Consulting; for serving on the Committee on Nominations and Conference on Statistical Practice Steering Committee; and for leading the ASA's fundraising work as chair of the Development Committee.

Vijayan N. Nair

University of Michigan

For service to the ASA spanning more than 30 years; for leading the journal *Technometrics* as its editor and also by chairing its management committee; for serving on and chairing the Committee on Publications; for serving on the Outstanding Statistical Application Award Committee and Committee on Energy Statistics; for service on the selection committee for the International Prize in Statistics; for leadership on the Committee on Nominations, particularly developing and clarifying procedures; and for providing guidance and wise advice to the association on many occasions.

Theresa L. Utlaut

Intel Corporation

For chairing the Quality and Productivity Statistics Section and Council of Sections Governing Board; for leadership of the Oregon Chapter in several roles, including president; for leadership in launching the ASA Accreditation Program, including serving as chair of the Accreditation Committee; for chairing the Committee on Membership Retention and Recruitment and Committee on Nominations; for serving on the Constitution and Bylaws Review Task Force and Task Force on Sexual Harassment and Assault; and for 10 years of leadership and support of ASA involvement in the International Science and Engineering Fair.

Each year, **ASA Fellows** are nominated by the membership and selected by the ASA Committee on Fellows. The following 47 fellows were inducted this year:

- Tony B. An
  SAS Institute
- Marcus Berzofsky
  RTI International
- Erica Brittain
  National Institute of Allergy and Infectious Diseases
- Nichole E. Carlson
  Colorado School of Public Health
- Matias D. Cattaneo
  Princeton University
- Debbie Cheng
  Boston University
- Jason T. Connor
  ConfluenceStat
- Daniel S. Cooley
  Colorado State University
- Xinping Cui
  University of California, Riverside
- Adrian Dobra
  University of Washington
- David J. Edwards
  Virginia Commonwealth University
- Wenjiang Fu
  University of Houston and Michigan State University
- Margaret Gamalo
  Pfizer
- Phyllis A. Gimotty
  University of Pennsylvania
- Kalyan Glosh
  Inference
- Emily Griffith
  North Carolina State University
- Samuel Christopher Haffer
  US Equal Employment Opportunity Commission
- Tailen Hsing
  University of Michigan
- Zonghui Hu
  National Institute of Allergy and Infectious Diseases
- Bo Huang
  Pfizer
- Jing Huang
  Veracyte
- Booil Jo
  Stanford University
- William Evan Johnson
  Rutgers University
- Daniel T. Kaplan
  Macalester College
- Sunduz Keles
  University of Wisconsin-Madison
- Joseph Koopmeiners
  University of Minnesota
- Robert Todd Krafty
  Emory University
- Shujie Ma
  University of California, Riverside
- Himel Mallick
  Merck Research Laboratories
- Tyler Harris McCormick
  University of Washington
- Yajun Mei
  Georgia Institute of Technology
- XuanLong Nguyen
  University of Michigan
- Jing Ning
  MD Anderson Cancer Center
- Layla Parast
  The University of Texas at Austin
- Marianna Pensky
  University of Central Florida
- Inna T. Perevozskaya
  GSK
- Robert W. Platt
  McGill University
- Nancy Potok
  NAPx Consulting
- Chad M. Schafer
  Carnegie Mellon University
- Deo Kumar Srivastave
  St. Jude Children's Research Hospital
- Alisa Stephens-Shields
  University of Pennsylvania
- Kert Viele
  Berry Consultants
- Lu Wang
  University of Michigan
- Xiaofeng Wang
  Cleveland Clinic
- Daniel L. Weiner
- Lingzhou Xue
  The Pennsylvania State University
- Corwin M. Zigler
  The University of Texas at Austin ■

JSM Panel Urges Statistical Community to Propose Research Institutes

Maya Sternberg, COPSS Secretary/Treasurer

2022 ASA President Katherine Ensor led a JSM late-breaking session urging the statistical and data science communities to propose mathematical sciences research institutes (MSRIs) in response to the National Science Foundation's current quinquennial call from its Division of Mathematical Sciences.

Tian Zheng, chair of statistics at Columbia University and a member of Ensor's NSF-engagement working group, organized and proposed the late-breaking session with help from David Banks, who was a leader of the Statistical and Applied Mathematical Sciences Institute—an MSRI that ran from 2002–2021 in Research Triangle Park, North Carolina—and participated on the panel.

The panel featured another SAMSI leader, a former leader of the Mathematical Biosciences Institute—an MSRI that ran from 2002–2020 in Columbus, Ohio—a former NSF Division of Mathematical Sciences director, and leaders from related NSF-funded institutes. The panelists highlighted the importance and urgency of a statistics-led MSRI and provided advice to potential proposers.

The Imperative of a Statistics-Led MSRI

Drawing on decades of experience leading institutes or related entities, panelists encouraged the statistics and data science communities to submit strong proposals for the MSRI solicitation and outlined the following four key points for why statistics-led institutes are critical at this time:

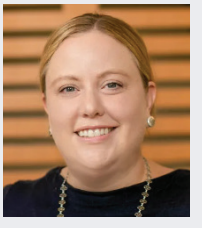
1. What statistics brings to science. First and foremost, the panelists emphasized the perspective, insight, and other scientific skills statistics brings to scientific problems. The importance of statistics—the science of learning from data—is magnified in the era of data science, machine learning, and AI because of its central role in all three. As noted in a 2023 ASA Board statement, "Framing questions statistically allows leveraging data resources to extract knowledge and obtain better answers."

The Panelists

Katherine B. Ensor
Rice University

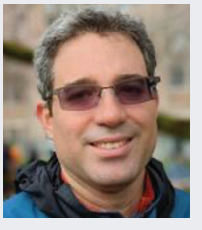
Tian Zheng
Columbia University

David Banks
Duke University



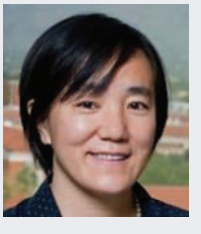
Kate Calder
The University of Texas at Austin

Sastry Pantula
California State University at San Bernardino



Abel Rodriguez
University of Washington

Richard L. Smith
The University of North Carolina



Helen Zhang
The University of Arizona

Beyond the merits of statistics itself, Sastry Pantula of California State University at San Bernadino reminded the audience that "statistics is inherently an interdisciplinary science, so saying we need to lead an interdisciplinary institute is redundant." He also urged the statistics community to organize themselves around MSRI proposals not only in recognition of the importance of statistics-led institutes for the benefit of our profession, but also as a driver of innovation in all science, technology, engineering, and mathematics.

2. Statistics community attributes synchronize with MSRI criteria. The panel highlighted how the strengths of statistics and the statistics community match many aspects of the MSRI solicitation. In addition to the already-noted interdisciplinary work of statisticians (cue John Tukey: "The best thing about being a statistician is that you get to play in everyone's backyard.), statisticians already excel in being a national resource, not just geographically but in terms of being of service to the entire mathematical sciences community and beyond. They also excel in developing the next generation of statisticians and data scientists and in knowledge dissemination and outreach. In addition to playing a key role in scientific discoveries, statisticians are leaders in fundamental research that has a long-term impact within statistical and data sciences.

Panel members spoke to other strengths the statistics and data science communities have that could provide an MSRI broader impact: the greater percentage of women earning statistics degrees than other quantitative, physical science, or engineering fields, particularly at the PhD level; the active mentoring community; and the efforts to build greater diversity in the field through StatFest, Infinite Possibilities, and the ASA JEDI group.

3. The challenges for bringing statistics to the science leadership table. Statistics-led MSRIs can operate in ways that are conducive to fostering statistical research and reflect the cultural differences in research processes, education, and training between mathematics and statistics. Kate Calder of The University of Texas at Austin shared the anecdote of a non-statistics-led institute at which she was expected to teach statistics to all student participants in a morning, whereas a topic such as dynamical systems would be given more airtime to bring participants up to speed.

More broadly, panelists noted a lack of understanding or misperceptions of statistics outside the community. For example, statistics is often seen as a bag of tools rather than a scientific discipline and approach, which the ASA Committee on Funded Research addressed in their 2017 document focused on the biomedical research community, "Statistical Issues Seen in Non-Statistics Proposals."

In statistics-led MSRIs, statistics would be hard-wired at the leadership table, so programming could allow for maximal impact on the statistics field and in the scientific domains of focus.

Helen Zhang of The University of Arizona pointed out that the University of Arizona TRIPODS program she led raised the visibility of statistics at UA substantially and brought her into meetings with deans, allowing her to integrate statistics into the UA research culture firsthand. Zhang also noted her leadership of UA TRIPODS better enabled those in computer science, data science, mathematics, and statistics to work together effectively.

Banks agreed on the difference in cultures, noting computer science has weekly meetings to keep work moving quickly and on track.

Abel Rodriguez of the University of Washington emphasized the importance of statistics-led MSRIs to counter the heavy bias in data science toward the computer science community. Rodriguez joined Zhang and Banks in noting the very different approaches of the statistics and computer science communities, the former taking a more case-study approach and the latter taking a systems approach.

4. SAMSI and related institutes speak to statistics-led MSRI imperative. The experiences of those involved in SAMSI, TRIPODS, and related efforts were often referenced when speaking to the push for a statistics-led MSRI. When asked about the legacy of SAMSI, Banks and Richard L. Smith of The University of North Carolina spoke to their diverse and deep impacts. Banks highlighted SAMSI's high-impact programs that led to substantial contributions to science such as astrostatistics, uncertainty quantification, and adversarial risk analysis. Smith spotlighted work in environmental statistics, forensics statistics, and ecology. He also noted the 'long-tail' impact of SAMSI, as the papers published in the years after a SAMSI workshop or sponsorship show. Additionally, both Banks and Smith noted the many graduate students and postdocs involved with SAMSI that have gone on to successful careers.

Pantula gave his perspective as head of the North Carolina State University Department of Statistics from 2002–2010, sharing that the department benefited enormously from SAMSI's affiliation with the university, as did the broader community. He noted SAMSI gave him an advantage when recruiting faculty, students, and postdocs and provided mentoring opportunities to fledgling statisticians across the United States. He also spoke about how SAMSI's influence extended to the National Academies—particularly its Committee on Applied and Theoretical Statistics—and the Canadian Statistical Sciences Institute, as well as to scientists in India. Indeed,

Smith was the first chair of the Canadian Statistical Sciences Institute's governing board, tapped for his experience leading SAMSI, and thereby had a key role in selecting the institute's first permanent director and eventual location in British Columbia.

Rodriguez shared that the successful TRIPODS phase II program, for which he is a leader, borrowed heavily from the SAMSI model and experience. He also cited the influence of the 2019 Statistics at a Crossroads Conference and report in getting him to think beyond a disciplinary perspective.

Advice for Potential Proposers

Panelists were sanguine about the potential success of statistics-led MSRIs with the continued explosion of data, continued emergence of data science, recent excitement about machine learning and AI, and societal challenges in the data-heavy areas of climate change and public health. Their advice covered the gamut. Rodriguez recommended thinking about envisioned MSRIs as data institutes for which statistical questions are central but tackled in true collaboration with scientists in other disciplines. He also urged being strategic with the proposed advisory boards to ensure an effective multidisciplinary approach.

Besides drawing on lessons from SAMSI, TRIPODS, and other centers, panelists recommended revising the aforementioned Statistics at a Crossroads report and 2013 report of the London workshop on the future of statistics and science.

Some panelists urged a culture that would better facilitate interdisciplinary collaboration, such as generating ideas in quicker cycles, as done well by the computer science community.

Calder noted the opportunity to be creative with statistics-led MSRIs, for example, by making diversity-related objectives and programming central to the overall administration of the institute, rather than as a separate component as she has seen elsewhere. She also urged proposed MSRIs be accessible and inclusive in a way that is as transparent as possible about operations and getting involved (i.e., no unwritten rules).

Zhang suggested thinking carefully about cultivating multidisciplinary collaborations and not just those that are statistically focused. She noted how the computer science and math folks at the AI TRIPODS had collaborations with medicine and specific disciplines but not as much with each other because of the different cultures. The University of Arizona folks of various disciplines learned how to collaborate and were motivated by commonality and acknowledged differences.

Rodriguez suggested exploring with DMS geographically distributed leadership models like that of the Regional Innovation Engines or Pacific Institute for the Mathematical Sciences to broaden leadership and take advantage of strengths not necessarily located in one geographic area.

The following were among the many other recommendations made:

- Play to the strengths of the statistics and data science communities in terms of multidisciplinary research.
- Have a robust plan for involving a diverse pool of undergraduate students. At a minimum, promote workshops and programs through active outreach and sending invitations to students of all backgrounds (as opposed to passively announcing a workshop program with a registration link).
- Given the NSF's new Technology, Innovation, and Partnership Directorate, identify and emphasize an impact component.
- Draw in all of the statistics and data science communities and relevant parts of the mathematics communities.
- Connect to data science, machine learning, and AI but don't leave out mathematicians and other disciplines.
- Engage a professional proposal writer early.
- Consider a mechanism for supporting state and federal government in policy development (e.g., to study the impact of changing the age of retirement).
- Consider an international component.
- Have a sense of urgency and make use of ASA communities to collaborate.

If you are considering applying for an MSRI, contact ASA Director of Science Policy Steve Pierson at *spierson@amstat.org*. ■

Further Reading

- "Why Statistics," *Science*, *bit.ly/3PMrbyC*
- ASA Statement on the Role of Statistics in Data Science in Artificial Intelligence, *bit.ly/44Yh8uy*
- "Undergraduate Statistics Degrees Up 474% Since 2010," *Amstat News*, *bit.ly/46khwEW*
- *Statistics at a Crossroads: Who Is for the Challenge?*, *bit.ly/46iBEad*
- *Statistics and Science: A Report of the London Workshop on the Future of the Statistical Sciences*, *bit.ly/3PomZDC*

USPROC Deadline Is December 20

The Undergraduate Statistics Project Competition encourages the development of data analysis skills, enhances presentation skills, and recognizes outstanding work by undergraduate statistics students.

The deadline for projects completed in summer/fall 2023 courses is December 20. Upload submissions to *causeweb.org/usproc.*

The categories for submission are the following:

- **Undergraduate Statistics Class Project Competition (USCLAP):** This competition is for undergraduate students taking a statistics/data science course at introductory or intermediate levels (which are separate categories) with a class project as part of the course work (either required or optional). The project submission is a paper (up to three pages).

- **Undergraduate Statistics Research Project Competition (USRESP):** This competition is for undergraduate students who conduct research projects related to statistics or data science, either methodological or applied. The types of research projects may include research work from summer REU research projects, senior-level research projects (part of coursework), or independent research projects (e.g., honors, capstone) that are not based on a specific course. The project submission is a paper (up to 20 pages).

Cash prizes will be awarded in all categories. Winners will also have the opportunity to present at the Electronic Undergraduate Statistics Research Conference (*causeweb.org/usproc/eusr/2023*).

For more information and to view winning submissions, visit *causeweb.org/usproc.* Questions can be emailed to Jennifer Ward at *jsward@clark.edu* or Juanjuan Fan at *jjfan@sdsu.edu*. ■

Conference on Advances in Multiple Testing Honors Sarkar

Edoardo M. Airoldi, Zhigen Zhao, and Jie Chen

The department of statistics, operations, and data science at Temple University hosted the Conference on Advances in Multiple Testing June 1 in honor of Sanat K. Sarkar for his 70th birthday and 40 years of service at Temple University.

Sarkar is an internationally recognized scholar who has made fundamental contributions to the development of multiple testing methodology and its applications in modern scientific investigations. He is an elected fellow of the Institute of Mathematical Statistics, an elected fellow of the American Statistical Association, and an elected member of the International Statistical Institute. He has served on the editorial boards of such journals as *The Annals of Statistics*, *The American Statistician*, and *Sankhyā: The Indian Journal of Statistics*. Additionally, he was awarded the Musser Award for excellence in research by the Fox School of Business and inducted several times to the Dean's Research Honor Roll at Temple University.

The conference started with opening remarks by Edoardo M. Airoldi, chair of the department, and Sudipta Basu, associate dean of the school of business, followed by the keynote by Yoav Benjamini, who shared his insights on selective inference in medical science, math, and politics. He reviewed the connection between replicability issues and selective inference that led the attack on the *p*-value and statistical significance and the responses of the ASA, and then discussed approaches to address selective inference, emphasizing some of Sarkar's mathematical contributions to the area. The rest of the conference program was filled by 10 invited presentations given by Sarkar's collaborators and professional friends, focusing on the following:

- Multiple testing under dependence (William Fithian and Aaditya Ramdas)
- Large-scale multiple testing (Etienne Roquain and Werner Brannath)
- Multiple testing on structure data (Jiangtao Gou, Marina Bogomolov, and Wenge Guo)
- Multiple testing methodology and applications (Ajit C. Tamhane, Xiongzhi Chen, and Thorsten Dickhaus)

A panel discussion with Dror Rom, Venkat Sethuraman, and Jie Chen highlighted the applications of multiple testing in the biopharmaceutical industry.

The conference brought together about 80 participants worldwide—mostly from academia and industry—including many of Sarkar's students, collaborators, and professional friends. It concluded with remarks from Sarkar, who shared results of his recent research in multiple testing.

A subsequent banquet was held with Sarkar's family. At the banquet, Sarkar's PhD adviser, Bimal K. Sinha, statistics professor at the University of Maryland Baltimore County, shared a story about the time they spent together. It ended with cheers, champagne, and messages for future research directions in multiple testing.

For more information about the conference, visit *bit.ly/46jay2I.* ■

Vladimir Geneus

ASA member Vladimir Geneus and his family were featured in a *Forbes* magazine article, "Excellence in Science and Math Runs in the Family."

Geneus, along with his siblings Christian and Olivia, all have either an MD or PhD. How does one family have all this educational success? According to Geneus, "Our parents—successful physicians—encouraged us."

Geneus earned his BA in mathematics from the University of Massachusetts, Amherst, and his PhD in statistics from Florida State University. He is currently a statistics manager at AbbVie.

Read more about Geneus's family at *bit.ly/3KZgN3y.* ■

Anthony Miles

ASA member D. Anthony Miles authored the book *Confessions of a PhD* and co-authored the book *Dissertation Research Methods: A Step-by-Step Guide to Writing Up Your Research in the Social Sciences*.

For *Confessions of a PhD*, Miles interviewed more than 100 students and compiled stories from 12 individuals pursuing their doctoral degrees. In the book, each graduate shares personal situations they've overcome and offers advice to anyone pursuing a doctorate.

Dissertation Research Methods: A Step-by-Step Guide to Writing Up Your Research in the Social Sciences focuses on methodology when planning, writing, and submitting your dissertation thesis. Together, Miles and coauthor Philip Adu guide readers through each stage of the dissertation process.

Miles is the CEO and founder of Miles Development Industries, a consulting practice and venture capital acquisition firm. He has a degree in marketing from The University of Texas at San Antonio. While working as a marketing analyst at Wells Fargo Bank, Miles discovered his interest in statistics, and his fascination grew during his doctoral program at the University of the Incarnate Word.

For more about Miles, read his ASA Story at *bit.ly/3PvXLU6.* ■

Adrian Raftery

Adrian Raftery, Boeing International Professor of Statistics and Sociology and adjunct professor of atmospheric sciences at the University of Washington, was recently named the 2023 Myles Hollander Distinguished Lecturer. Raftery will present "Down-Scaled Probabilistic Climate Change Projections, with Application to Hot Days" on October 25 at 11:00 a.m. at Florida State University.

Born in Dublin, Ireland, Raftery earned a BA in mathematics in 1976 and an MSc in statistics and operations research in 1977 from Trinity College Dublin. He then earned a doctorate in mathematical statistics in 1980 from the Université Pierre et Marie Curie in Paris, France.

Raftery was a lecturer in statistics at Trinity College Dublin from 1980–1986, and then joined the faculty in statistics and sociology at the University of Washington. He was also the founding director of the Center for Statistics and Social Sciences (1999–2009). His research focuses on Bayesian model selection and model averaging; model-based clustering; inference for deterministic simulation models; and the development of new statistical methods for demography, sociology, and the environmental and health sciences.

Raftery has published more than 200 articles, edited three volumes of the annual *Sociological Methodology* compilation, co-edited *Statistics in the 21st Century*, and co-authored *Model-Based Clustering and Classification for Data Science, with Applications in R*. He is an elected member of the National Academy of Sciences and Sociological Research Association and an honorary member of the Royal Irish Academy. He is also a fellow of the American Statistical Association and Institute of Mathematical Statistics and an elected member of the International Statistical Institute.

The Myles Hollander Distinguished Lectureship was established by Robert O. Lawton, distinguished professor and statistics professor emeritus at Florida State University, in appreciation of the university, its statistics department, and the statistics profession. The annual lectureship recognizes an internationally renowned leader and pioneering researcher in statistics who has made a sustained impact on the field. The lectures feature topics spanning the breadth of statistics.

The live talk will be accessible via Zoom. For more information and to register, visit *stat.fsu.edu/HollanderLecture.* ■

Obituary

Calyampudi Radhakrishna Rao

Renowned Indian-American mathematician, statistician, and professor Calyampudi Radhakrishna Rao passed away at the age of 102 on August 22, 2023.

Statisticians and scientists throughout the world have celebrated Rao's long career in statistics.

Rao was born September 10, 1920, in Hadagali, Karnataka, India. He grew up with six brothers and four sisters in a comfortable family environment created by his mother, A. Laxmikanthamma, and father, C.D. Naidu.

Rao earned his master's in mathematics at Andhra University, another master's in statistics at Calcutta University, and his PhD and ScD at Cambridge University. He also received 27 honorary doctoral degrees from colleges and universities, including seven from India and four from the United States.

Rao joined the ASA in 1970 and was honored two years later with election to fellow for outstanding and prolific contributions and his devotion to statistical teaching and service. The ASA Pittsburgh Chapter named Rao its statistician of the year in 1981. In 1989, he was awarded the Samuel S. Wilks Medal for outstanding contributions to statistics. In 1997, he received the Distinguished Achievement Medal from the ASA Section on Statistics and the Environment for outstanding contributions to the development of methods, issues, concepts, and applications of environmental statistics.

In addition to his extensive ASA activities and awards, Rao was a member of eight national academies in India, the United Kingdom, the United States, and Italy. He was elected a fellow or honorary member of 26 statistical, mathematical, and scientific organizations. Rao also received dozens of medals, citations, awards, and other honors for his contributions to statistics and science, including the highest statistics honor, the International Prize in Statistics, in 2023.

Statisticians and scientists throughout the world have celebrated Rao's long career in statistics. In his remarkable 1945 paper published in the *Bulletin of the Calcutta Mathematical Society,* Rao demonstrated the following three fundamental results that paved the way for the modern field of statistics and provided statistical tools heavily used in science today:

- The first, now known as the Cramér-Rao lower bound (*bit.ly/45dM22l*), provides a means for knowing when a method for estimating a quantity is as good as any method can be.
- The second result, named the Rao-Blackwell Theorem (*bit.ly/45TJvLR)*, provides a means for transforming an estimate into a better—in fact, an optimal—estimate.
- The third result provided insights that pioneered a new interdisciplinary field that has flourished as "information geometry."

Combined, these results form a foundation on which much of statistics is built and help scientists more efficiently extract information from data.

A tribute to Rao's extraordinary contributions to statistics will appear in the December issue of *Significance*.

For more information about Rao from the ASA archives, read the following articles:

- "Interview with Professor Calyampudi Radhakrishna Rao," *bit.ly/3EOIhVW*
- "C.R. Rao Receives National Medal of Science," *bit.ly/3PqRd8Y*
- "C.R. Rao's Foundational Contributions to Statistics: In Celebration of His Centennial Year," *bit.ly/48yxX2n*

Obituary

Greg Campbell

Estelle Russek-Cohen, ERCStat, and Lilly Yue, FDA/CDRH

Greg Campbell had nearly 33 years of federal government service, 13 years at the National Institutes of Health and 20 at the Food and Drug Administration, by the time he retired in 2015. He joined the NIH in 1982 after a faculty position in Purdue University's statistics department, became a tenured research scientist at NIH, and was a member of the Laboratory of Mathematical and Statistical Methodology at the Division of Computer Research and Technology when Jim Mosimann served as chief. Mosimann remarked, "Greg was the most complete statistician I worked with, an understanding consultant with medical researchers from all institutes and a skilled mathematical statistician on the frontier of Bayesian analysis."

Greg then became chief of the analytical biometrics section in the National Institute of Neurological Disorders and Stroke. In 1995, he joined the FDA as director of the Division of Biostatistics at the Center for Devices and Radiological Health. During his tenure there (1995–2015), Greg played a leading role in the development of the division and built a strong organization recognized for excellence. When he came in, there were only 18 statistical reviewers; when he left, there were 62 in five branches. He hired 80 mathematical statisticians and shaped the careers of many by hiring, mentoring, and leading with his vision, insight, and intelligence. Greg and his staff made numerous contributions to the statistical field, often motivated by the problems seen at the FDA. Several staff went on to leadership positions in other parts of the FDA.

Beyond the division, Greg played an outstanding leadership role in establishing a statistical community of medical devices. He was a founder of the annual FDA/AdvaMed Statistical Workshop, established in 2008, which is a forum for collaboration among industry, academia, and the FDA. He was also a driving force in the formation of the ASA Special Interest Group for Medical Devices and Diagnostics, which became a section in 2014.

In the broader community, Greg served as the president of the FDA Statistical Association in 1999 and the co-chair of the FDA/Industry Statistical Workshop in 2000. He also served as a member and then head of the Eastern North American Region's advisory board in the early 2000s and had been on the board of directors for the Society for Clinical Trials.

To support medical device technology innovation and regulatory decision-making, Greg led many initiatives. He was a driving force and an exceptional leader in statistical innovation in the medical device world and in advancing regulatory science, and he helped shape the course of medical device evaluation. He pioneered, adapted, and advanced Bayesian statistical methodology, causal inference, adaptive design, missing data, and diagnostic test methodology, just name a few, in regulatory settings. His pioneering work and sustained leading efforts have made a profound, far-reaching, and long-lasting impact on public health, industry, and the FDA.

He also spearheaded the efforts in FDA statistical guidance development for medical devices, including guidance documents on implementing Bayesian statistics, pivotal clinical trial study design, and adaptive designs in regulatory submissions.

Greg was an internationally renowned statistical leader in regulatory science, highly respected by statisticians and other professionals within and outside the FDA. He was a member of the prestigious Senior Biomedical Research Service in the Department of Health and Human Services and a fellow of the ASA and Society of Clinical Trials. He received numerous awards, including the FDA Distinguished Career Service Award, FDA Commendable Service Award, FDA Merit and Outstanding Service Award, and FDA Scientific Achievement Award for Excellence in Analytical Science.

After Greg retired in 2015, he did not stop contributing to medical device statistics. He consulted and gave invited talks. His most recent publications include two in 2023, one of them on a topic he was passionate about: using Bayesian methods in regulatory submissions.

Greg was well known for his humor, kindness, gentleness, courage, and love of others. He treated people with genuine care, respect, and fairness. He leaves behind a loving wife, two children, and five grandchildren. Many of us lost a friend, but the statistical community lost a leader. He will be missed!

Greg passed away May 25, 2023.

Obituary

Robert Daniel Small

Anna Small

Bob Small died on June 3, 2023, after living life to the fullest and doing what he loved.

He was known for his love of and commitment to his family, his desire to play a significant role in his grandchildren's lives, his lengthy bike rides all over the world, his habit of starting every day with a cup of coffee and at least one newspaper, his ability to do advanced math equations on paper napkins, his love of the Baltimore Colts, his dry sense of humor, his ornithological knowledge, and his ability to talk about anything—baseball, how the moon affects the tides, politics, history, or the many places he traveled. He enjoyed all the *Star Wars* movies with his children and grandchildren and was always willing to share a glass of wine or bowl of ice cream with friends or family.

Bob was the first in his family to go to college and attended the University of Maryland, College Park, where he met Gay. He earned a master's degree from New Mexico State University and a PhD in biostatistics from North Carolina State University.

Bob was a fellow of the American Statistical Association and accomplished much professionally, giving him an interesting and rewarding career in the pharmaceutical industry. He made important contributions to vaccine development, especially global COVID-19 vaccines at CEPI. He refused to retire, and his work and cycling were his hobbies.

Bob was doing what he loved until the day he died. In January, he spent a week in Curaçao with his family and went scuba diving. In February, he hosted a dinner and wine party with friends and family from the Netherlands, New York, and Florida. In May, he celebrated his 79th birthday with his family and a few glasses of wine. He had recently returned from a business trip to London and was enjoying his consulting work. He was riding his bike when he collapsed.

While we had hoped to share more years with Bob, we take comfort in his full life and his not suffering at the end. We consider ourselves extremely fortunate to have had Bob as a husband, father, grandfather, and family member.

2024 Waksberg Award Recipient Announced; Nominations Sought for 2025

In 2001, the journal *Survey Methodology* established an annual invited paper series in honor of Joseph Waksberg—a giant in survey sampling for nearly seven decades—to recognize his contributions to survey statistics and methodology. Each year, a prominent survey statistician is chosen to write a paper that reviews the development and current state of an important topic in survey statistics and methodology and reflects the mixture of theory and practice that characterized Waksberg's work.

The 2024 recipient of the Waksberg Award (*bit.ly/3t6oSx9*) is Richard Valliant, research professor emeritus at the University of Michigan and Joint Program in Survey Methodology, University of Maryland. Valliant will give the Waksberg Invited Address at the Statistics Canada Symposium in 2024 and write a paper planned for publication in the December 2024 issue of *Survey Methodology*. The award also includes an honorarium made possible by a grant from Westat.

Valliant was selected by a four-person committee—M. Giovanna Ranalli (chair), Jae-Kwang Kim, Kristen Olson, and Denise Silva—appointed by *Survey Methodology* and the American Statistical Association.

Nominations are currently being sought for the 2025 Waksberg Award. The recipient will receive an honorarium and give the 2025 Waksberg Invited Address at the Statistics Canada Symposium, expected to be held in the fall of 2025. The paper will be published in an upcoming issue of *Survey Methodology* (targeted for December 2025).

The author of the 2025 Waksberg paper will be selected by a four-person committee appointed by *Survey Methodology* and the American Statistical Association. Nomination of individuals to be considered should be sent by email before February 15, 2024, to the chair of the committee, Denise Silva, at *denisebritz@gmail.com*. Nominations, which will remain active for five years, should include a CV and nomination letter.

Previous Waksberg Award honorees and their invited papers can be found at *bit.ly/3t6oSx9*. ■

ASA AWARDS & RECOGNITION

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Professional Opportunity listings are shown alphabetically by state, followed by international listings. Vacancy listings may include the institutional name and address or be identified by number, as desired.

These listings and additional information about the 65-word ads can be found at *ww2.amstat.org/ads.*

Also, look for job ads on the ASA website at *https://jobs.amstat.org/jobseekers.*

Massachusetts

■ The Biostatistics Program in the Department of Biostatistics and Epidemiology at the University of Massachusetts Amherst seeks a tenure track faculty at the rank of Assistant Professor. The application review process will begin October 1, 2023 and will continue until the position is filled. The earliest anticipated start date is September 2024. View the full job posting and apply at *bit.ly/48stnSY.* The University of Massachusetts Amherst is an Affirmative Action/Equal Opportunity Employer of women, minorities, protected veterans, and individuals with disabilities and encourages applications from these and other protected group members.

Texas

■ The Department of Mathematical Sciences at The University of Texas at El Paso (UTEP) seeks a data scientist with expertise in statistical modeling of big data and/or high-performance data analytics, for a tenure-track assistant professor position. Successful candidates will develop research programs, mentor and teach undergraduate and graduate students. Experience in applied interdisciplinary research/industry is encouraged. To view the full ad and apply visit *www.utep.edu/employment.* UTEP is an Equal Opportunity Employer.

International

Taiwan

■ The Institute of Statistical Science of Academia Sinica Taipei, Taiwan, is pleased to invite applications for our tenure-track faculty positions as Full/Associate/ Assistant Research Fellows at the Institute of Statistical Science to commence on August 1, 2024 or as soon as possible thereafter. For more details, please visit our website. For those who are interested in the positions, please submit your applications before December 1, 2023. For details contact *https://bit.ly/3P6eZXV.* ■

This month's Top 10 is the '**Top Ten Signs You Should Have Picked a Better Hotel**.'

Wasserstein

Amstat News continues its hilarious offering by ASA Executive Director Ron Wasserstein. Each month, he delivers a special "Top 10"—one that originally aired on a recent edition of the *Practical Significance* podcast. Ron says, "Over the years, I've stayed in many hotels. Most have been quite nice, but I've learned a few lessons during my travels." Here, he shares his "Top Ten Signs You Should Have Picked a Better Hotel."

10

Uber and Lyft won't take you there, and taxis let you out three blocks away.

09

Valet parking is provided by the local chop shop.

08

Rates are by the hour, with a 30-minute minimum.

To listen to the *Practical Significance* podcast, visit *https://magazine.amstat.org/podcast-2*.

07

At check-in, they give you a bottle of water, a can of bug spray, and a handgun.

06

You get a wake-up call, whether you want one or not.

05

And the wake-up call is the front desk clerk banging trash can lids outside your door.

04

The rooms are only cleaned every three days, regardless of whether the occupant has changed during that time.

03

The vending machine vends pot and Molly.

02

There is a funeral home next door … managed by the same people as the hotel.

#01

You find out that I, Ron Wasserstein, am registered there.

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