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AMSTATNEWS

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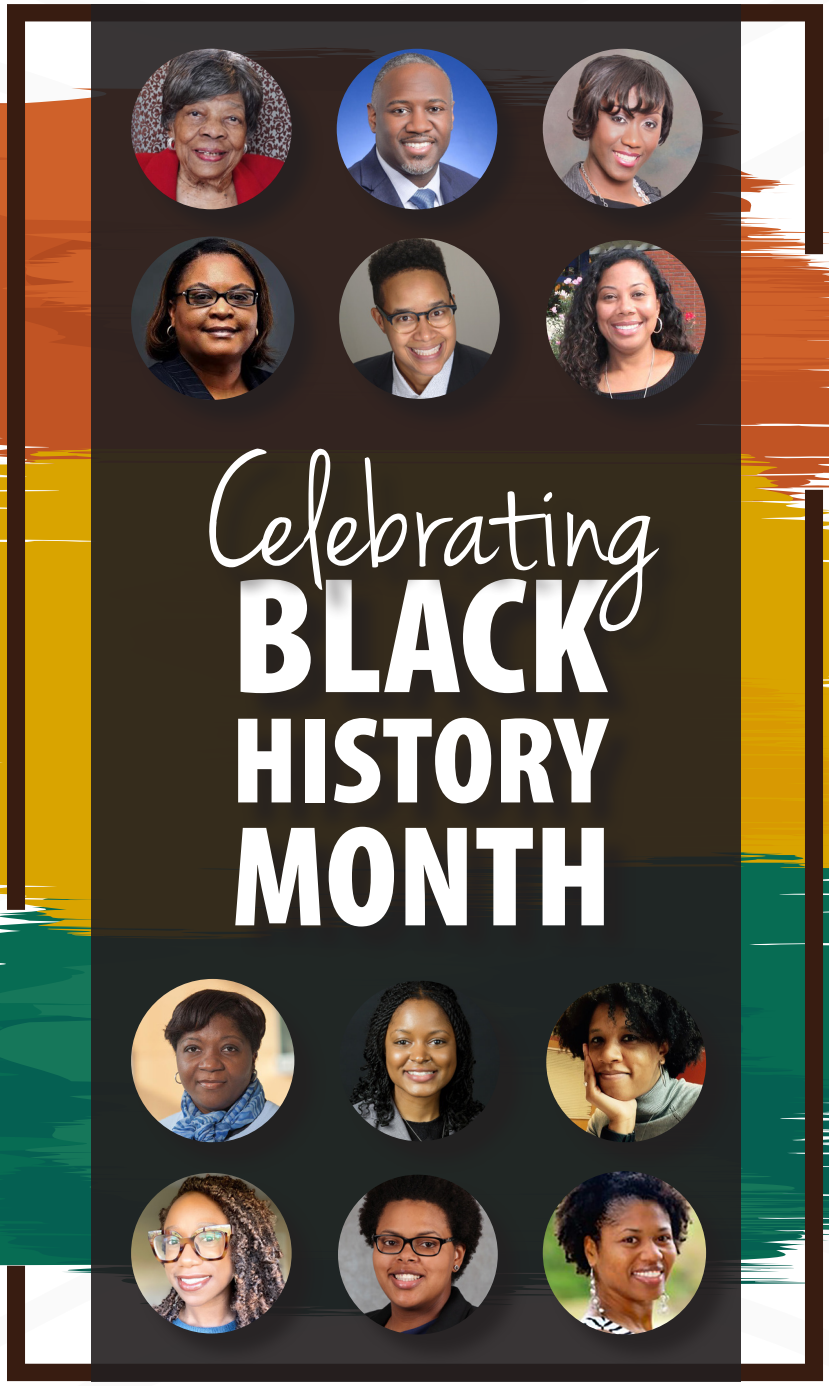

ALSO:

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AMSTATNEWS

FEBRUARY 2022 • ISSUE #536

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

Celebrating the Life of Annie T. Randall, Page 20

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*.

SDSS

PITTSBURGH, PA • JUNE 7–10, 2022

Registration opens online February 15 for the 2022 Symposium on Data Science and Statistics. The theme this year is Beyond Big Data: Supporting Students and Early-Career Professionals. Read more about the event on Page 33 of this issue. *ww2.amstat.org/meetings/sdss/2022 registration.cfm*

PhD in Statistics—Where to Start?

If you are interested in pursuing a PhD in statistics, you should check out Statsphd.com. It is an online resource curated by a group of volunteer statistics PhD students dedicated to making graduate study in statistics more broadly accessible. *www.statsphd.com*

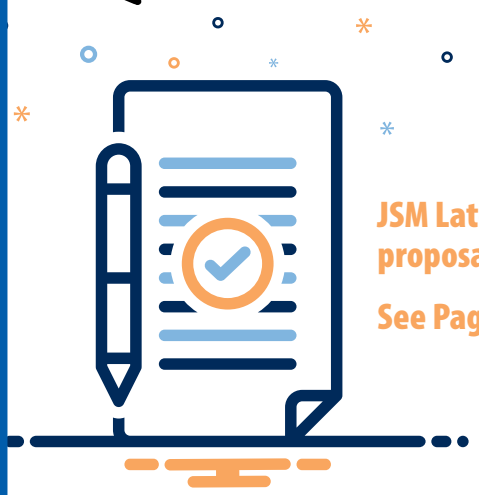
Cherry Blossom Competition

Competition is open to all for the new international prediction competition, "When Will the Cherry Trees Bloom?" Compete for prizes of up to $5,000 and help scientists better understand the impacts of climate change! Deadline to enter is February 28. For complete details or to contact the organizers, visit *https://competition.statistics.gmu.edu.*

CORRECTION

In the January issue, the JEDI corner stated there were three *Star Wars* movies instead of trilogies. We apologize for the confusion.

departments



JSM Late-Breaking Session proposals are due April 15!

See Page 32.

member news

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Academic Leadership and How ASA Helps Members Grow as Academic Leaders

Katherine Ensor

Hello, ASA colleagues. In this month's column, I want to focus on leadership—specifically statisticians leading in the university environment. Future columns will address leadership from other sectors of our community.

Our profession has many exceptional examples of statistics faculty who have embraced opportunities of academic leadership. Many developed their leadership style through active engagement with the ASA.

As a field, statistics is collaborative and outward facing. We collaborate with each other to develop new insights and methodologies but connect outside our discipline to advance science and serve society. Thinking deeply about new methods and data, coupled with the transformative growth collaborative science brings, provides an extraordinary environment in which to grow as an academic leader. My mentor H. Joseph Newton was a superb Dean of Science at Texas A&M.

How do you get on the leadership radar screen of universities? For academic leadership, the ASA Caucus of Academic Representatives (CAR) brings together leaders of academic statistics and data science programs. It is generally this community, but not always, from which our members move into the role of deans, associate provosts, provosts, and even presidents.

To identify the best next leader for positions at the level of dean and above, universities will establish a search committee often supported by an external search firm. Statisticians serving on these search committees are the voices for our community. By identifying individuals from our community and advocating for suitable candidates, the national/international pool expands to include statisticians. It is also important to know that search firms maintain lists of individuals interested in academic leadership positions. The search process is the unique opportunity for the candidate and university to explore their shared values and vision prior to a commitment.

The interdisciplinary nature of our field positions us to lead a broad array of intellectual and educational efforts. For example, let me point out the academic leadership of three previous ASA presidents. At Rice University, we were privileged to have Sallie Keller (2006 ASA president) serve as dean of the George R. Brown School of Engineering. At that time, I was chair of the statistics department and had the pleasure of working with her. She truly advanced our programs and opportunities during her tenure as dean, and the monumental steps forward by Rice engineering are still with us today.

Sally Morton (2009 ASA president) is the executive vice president of Arizona State University's Knowledge Enterprise and previously served as dean of the Virginia Tech College of Science. And Sastry Pantula (2010 ASA president) serves as dean of the college of sciences at California State University, San Bernardino. Their leadership is appreciated and praised by many.

In case you are wondering, being ASA president is not required to lead at the university level! There are many superb examples from our community. At the provost and associate provost levels, we have Hal Stern, provost and executive vice chancellor of the University of California, Irvine; David Madigan, who serves as provost and senior vice president for academic affairs at Northeastern University; Monica Jackson, deputy provost and dean of the faculty at American University; and Kumer Das, assistant vice president for research, innovation, and economic development and vice provost at the University of Louisiana at Lafayette.

Moving to the role of university president, Mark Becker recently ended his successful tenure leading Georgia State University and, in July 2021, Montse Fuentes became president of St. Edward's University. University communities benefit immensely from the service of these and many other remarkable members of our profession.

I reached out to Fuentes to garner further insight into how her role as a leading statistician helps her lead a university. With her path-breaking leadership, Fuentes has served the ASA and profession in many ways. While editor of the *Journal of the American Statistical Association*, Applications and Case Studies, she established the reproducibility requirements for ASA journals, truly setting up our profession as a leader in reproducibility and replicability of research findings. In 2017, she received the Medal of Distinguished Achievement from the Environmental Statistics Section for major statistical methodology contributions, leadership, and mentoring. She

continues as an active ASA member, currently serving on the Committee on Fellows.

Montse Fuentes

How did your training in statistics prepare you for or cultivate your interest in university leadership?

Fuentes: The inherently interdisciplinary nature of statistics as the science that transforms data into knowledge, combined with my own interest to put that knowledge to practice to transform society and improve lives, facilitated a progression of leadership opportunities that allowed me to bring the gift of an education to others. My own statistical training has inspired me and allowed me to promote effective university leadership by making data-driven decisions with transparency and appreciating interdisciplinarity and the contribution of different disciplines to advance knowledge. It has also given me the confidence to deal with uncertainty and provide stable leadership to those relying on me.

How did the statistics community, and specifically the ASA, help you develop your leadership skills or provide you opportunities in this regard?

Fuentes: A very important aspect of effective leadership beyond the management of decision-making is the ability to communicate effectively and be inspired to empower others. The ASA has presented continued opportunities for mentorship by giving me access to individuals who helped and inspired me, like Sally Morton and Marie Davidian. It also provided networking and connections, while giving me the opportunity to learn, practice, and enhance my communication skills. I am committed to paying it forward by being a good mentor to others.

What have you enjoyed most about university leadership? Enjoyed least?

Fuentes: What I enjoy the most is the students. They inspire me every day to be the best I can be for them; they bring initiative and a desire to create a better world—they are our future. It is such a joy to be part of their journey to a better and enriching life.

There is a significant amount of invisible work for a university president in relation to personnel matters, legal concerns, and litigation that needs to be given the attention and diligence it deserves without taking away from the joy of being an educator. It would be surprising for many how much litigation and legal matters involve university leadership.

What advice do you have for mid-career statisticians who are interested in contributing to society through university leadership?

Fuentes: I always recommend seeking mentoring and coaching so you can develop into the best leader you can be. The ASA provides a lot of opportunities in this regard. A statistician already has half the preparation in place to becoming an effective university leader due to their ability to make informed decisions, manage budgets and uncertainty, and promote strategic thinking. But I would recommend training to enhance communication skills and opportunities to see how much satisfaction you get from helping others to be successful. In any leadership role, it is important to put the interest of others beyond your own, and you need to find it rewarding and satisfying to see others become successful for that to be sustainable.

Anything else you might want to share with our community?

Fuentes: We are navigating through difficult times, as our world has gone through upheaval. A university president needs to make a lot of difficult decisions daily without enough information, and our faculty and staff are suffering burnout. But I never have a bad day at work, because the mission of my institution—St. Edward's—and my own values and commitment to diversity, equity, and inclusion are in complete and full alignment. I have learned the alignment of your institution's values and your own is the most important aspect of successful leadership, because all the decisions need to be guided by those values, and I have the privilege of leading with values already embraced by the community.

Thank you to Fuentes for sharing her insight and wisdom with the future leaders reading this column.

A quick search of the term "leadership" on Amstat.org brings up about 5,280 results, including a 2018 President's Corner column by Lisa LaVange about building a leadership institute. As I peruse this list, I see many activities in which ASA members advance the leadership conversation, including a JSM leadership professional development workshop and a series of leadership videos by Eli Lilly. Recently, the Washington Chapter hosted a leadership workshop for its members. The workshops are well attended and received. In 2020, the Council of Presidents of Statistical Societies established the Leadership Academy Award to "recognize early-career statistical scientists who show evidence of and potential for leadership and who will help shape and strengthen the field." Are these individuals future university presidents? It is a fantastic group and growing, so one can hope!

ICSA Panel Discusses Partnerships, Collaborations Across Sectors, Part 2

Victoria Gamerman, Boehringer Ingelheim; John E. Kolassa, Rutgers, The State University of New Jersey; Jim Z. Li, Viatris; Fanni Natanegara, Eli Lilly and Company; Kimberly F. Sellers, Georgetown University; Aniketh Talwai, Medidata; and Kelly H. Zou, Viatris

During the 2021 International Chinese Statistical Association (ICSA) Applied Statistics Symposium, several panelists discussed the key elements of forming and sustaining successful collaborations and partnerships, along with challenges and barriers. This is Part 2 of a two-part panel that includes six experts from either academia, industry or consulting, with Kelly Zou as the moderator. To read part one, visit *bit.ly/3AhgkDq*.

Panelists


Victoria Gamerman

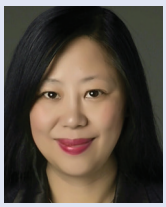

John E. Kolassa


Jim Z. Li


Fanni Natanegara


Kimberly F. Sellers


Aniketh Talwai


Kelly H. Zou

What are good practices for setting expectations and making plans before embarking on a collaborative relationship?

Kimberly Sellers advised that one of the best practices throughout a collaborative relationship is to offer clear communication and transparency. This includes open discussion about expectations at the beginning of the project and regular follow-up (both verbally and in writing) to ensure all parties are on the same page with regard to project status, issues or concerns, etc.

John Kolassa elaborated, saying that in reference to 'challenges,' we may find unexpected barriers arise during joint projects and we sometimes pay a price for having projects not live up to our initial expectations. We need to be flexible and willing to overlook each other's failings if we are to make human relationships, including research relationships, work. It's also important to understand and predict how much flexibility is in our schedules and to not over-promise.

To collaborate, Jim Li suggested beginning with the end in mind after discussing what to do (e.g., a research project) and resource needs (e.g., personnel and budget). The collaborators need to discuss how to carry out the collaboration, including the following:

- What are the deliverables (e.g., reports and publications)?
- How to share the resources (e.g., budget), fruit (e.g., authorship)?
- What governance structure (e.g., steering committee, technical review committee, multiple workgroups) and standards/processes (e.g., guidelines, standard operation procedures, forms, templates) to use?
- How to make decisions, and who makes them, during the planning, implementation, and assessment of the collaboration?

How to navigate through challenges and barriers (e.g., the role, effort, and urgency of statisticians) via multidisciplinary collaborations?

Fanni Natanegara offered best practices for navigating through

challenges and barriers in multidisciplinary collaborations. For the partnership to be successful, each member needs to understand their role and contribution and be accountable for delivering their tasks.

Secondly, it is important to build the right infrastructure and process for the collaboration to sustain over time. This could include understanding and agreeing to the what and why by setting up mission and vision statements, a charter document, or simply an objective statement saying the collaborators will work toward a common goal.

The how includes laying out the steps the team will follow. This could include setting up regular meetings and conference calls, agreeing on a metric to measure success, and making incremental progress toward the common goal.

Finally, Natanegara said she could not overemphasize the importance of communication so everyone is updated on the progress of the project and aware of any new information or ideas that may affect the work. All these points are important to get the project work done efficiently and seamlessly.

Kolassa reflected on cross-institutional collaborations. To him, some of the barriers are process-related but compliance-necessary (e.g., human subjects' approval; multiple institutions often imply multiple human subjects review committees). Bureaucratic steps that arise from the involvement of multiple sectors appear to be a nuisance, but he said comprehensive checks protect us against important ethical dangers.

Li referred to project management tools and tasks. He has come to appreciate the contribution of a dedicated person for project oversight, because it is critical that someone takes responsibility for keeping the project on schedule.

How to ensure voices and opinions from a diverse community are heard during collaborative relationships?

When considering the possible contributions different collaborators can make, Victoria Gamerman stressed the importance of discussing beyond the qualifications and desired outcomes, though this is a good foundation and a must. It is also important to share the journey along the way so collaborators can actively learn from each other and leverage the strengths of their partners. Some may bring a new data source, a different analytic approach, or a stakeholder perspective, all of which should add value to the overarching goals of the collaboration. Further, it is important to identify sponsors who can be echo chambers and advocates for the collaboration and individuals within it doing the everyday work to make it successful.

Sharing successes and pitfalls throughout the collaborative process is an important step for statisticians and data scientists, so those with a different background can take part in data wrangling and insight generation. To an untrained eye, what statisticians and data scientists do may be simple but we, within this community, know what is under the hood better than others. This gives us the important opportunity and responsibility to contribute to the education of our partners or collaborators by sharing the steps along the way (perhaps summarized), using the data to tell a story of both the end result and intermediate processes.

Sellers suggested collaborators seek out representation from diverse communities and invite those with differing backgrounds and perspectives into the collaborative relationship. It is easy to gather people with similar mindsets and backgrounds because one may perceive this would lend itself to a smooth experience. Such an approach, however, can be problematic because even the most innocent operations can produce adverse effects or have unforeseen/unintended consequences. Thus, it is helpful to gain heterogeneous feedback and insight throughout the collaboration.

Furthermore, Natanegara stressed the importance of finding an ally to make sure your voice is heard in meetings in which key decisions are made. An ally will be able to support your voice or bring you and your ideas to the discussion table. To build an alliance, you could set up one-to-one

meetings with key stakeholders to share ideas prior to the team meeting. Based on these one-off meetings, you can refine your ideas and be prepared to bring them to the meeting.

The reverse is true if you are in a senior or leadership position. Be that ally to your junior or newer colleagues. If you see someone struggling to get their opinion heard in a meeting, then be the voice for that person and confirm what they are trying to convey so the rest of the group can hear and understand.

What are the top one or two skills you would suggest for making collaborations and partnerships fruitful?

Aniketh Talwai has found it helpful to think of partners/collaborators as the participating people, not just their respective organizations (e.g., universities, companies, etc.), Identify and proactively enlist the support of your counterparts in partner organizations who have both the ability to and interest in championing and driving the project internally.

Second, while good communication skills help drive the success of nearly every project, those who are managing partnerships and collaborations will likely benefit from being particularly diligent in tailoring communication styles to different audiences.

Kolassa commented that it is interesting to explore the role of 'service' in the sciences. Many of us might see ourselves as providing a service but, in many ways, people performing experiments and providing project leadership are also providing a service. It's also important to primarily engage in projects we see as valuable; it's particularly important for junior faculty to have the flexibility to avoid taking projects only to fill a support quota.

Finally, Li reemphasized that communication skills are crucial for a collaboration or partnership to be successful. Overall, both technical and soft skills are important to being effective collaborators in a fruitful data science or statistical partnership.

Editor's Note: *The views expressed are the authors' and do not necessarily represent those of their employers.* ■

MY ASA STORY

D. Anthony Miles, Chief Executive Officer

I feel fortunate to be part of an organization that promotes the practice and profession of statistics.

My career path has been colorful, to say the least, and my life has been an interesting irony. I played in a rock-and-roll/heavy metal band while I was in college. My band and I tried to get a record deal and thought we'd become famous, appearing on *MTV, Solid Gold, American Bandstand,* and so on. Well, we did not get the record deal. Life happens. But, as an accomplished musician, I have recorded eight albums of original avant-garde jazz.

After earning my undergraduate degree, I got into the retail, banking, and financial services industries, where I spent 30 years of my career. I worked as a loan officer doing consumer finance, and then became a marketing analyst with Wells Fargo Bank, which is where I gained an interest in statistics. As time passed, I found it was my calling to become a statistician and eventually left the banking industry to start my consulting practice.

I became enthusiastic about statistics while I was in my doctoral program at the University of the Incarnate Word. I first learned about the American Statistical Association from my uncle and mentor, the late Ralph E. Miles. He was a biostatistician with the US federal civil service and an ASA member. Honestly, it was my uncle who nurtured my *love* of the practice of statistics, and I credit all my accomplishments to him.

During my doctoral program, I won a fellowship from the United States Association for Small Business and Entrepreneurship (USASBE) Doctoral Consortium for my research on entrepreneurial risk patterns and predictive analytics that cause business failure. I was selected as one of 17 distinguished doctoral researchers nationwide in the field of entrepreneurship, and it was an honor to be recognized in my field.

I joined the ASA in 2020, after receiving an invitation to become a member in my mailbox. I was so delighted—I felt like I had been welcomed into the world of statistics. But it was a major milestone in my career that led me to become more involved within the ASA. I recently became a 21-time winner of the Academy of Business Research Conference's Award for Best Paper in Marketing and Economics, setting a record for the most conference awards for my research. I had the opportunity to share this milestone with fellow ASA members via *Amstat News*, becoming part of the history and legacy of the association.

The opportunity to become involved with ASA-affiliated conferences has been the most rewarding part of membership. My participation has already opened doors. I've made priceless connections, and reading the stories by other ASA members has been inspiring. I hope to share my statistics research in business by presenting at a future ASA Conference on Statistical Practice.

If a fortune teller had looked into a crystal ball when I was a struggling musician and told me I would one day be a statistician and member of the same organization as my late uncle, I would have laughed!

My passion for statistics has grown through my membership, and the experience has been meaningful and fulfilling. I feel fortunate to be part of an organization that promotes the practice and profession of statistics. I am truly blessed.

***D. Anthony Miles** is the chief executive officer and founder of Miles Development Industries Corporation.* ■

Risk Know-How: Supporting Communities in Navigating Risks

Leonor Sierra, Sense about Science Associate

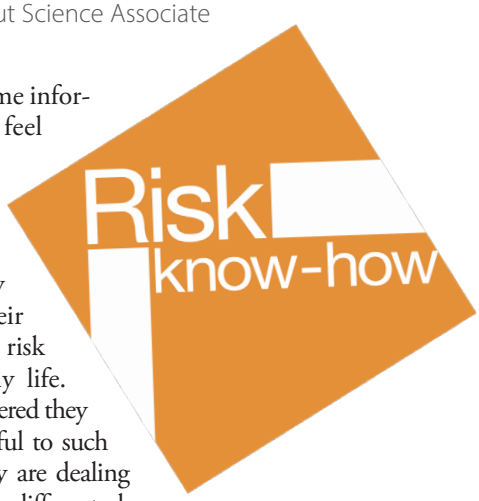
What do a community leader in rural Kenya and a fishing safety facilitator in coastal Bangladesh have in common? Why are they interested in what an adviser to a village near Fukushima following the nuclear accident has to say? Whether it's engaging with their community on climate change and the effects it has on rainfall patterns, explaining what a 1 in 100-year cyclone means, or communicating whether it is okay to drink tap water near Fukushima, these are all conversations about risk.

There are people around the world who take responsibility for these conversations in their communities, often with limited support or tools. These community practitioners develop effective ways of engaging, so they are uniquely placed to share what works and what doesn't and to provide feedback about the usefulness, or otherwise, of data sources and resources.

There is now an important opportunity for members of the American Statistical Association to support such people and develop a practical framework for risk know-how that many of them are helping to forge.

Risk Know-How (*riskknowhow.org*) aims to support communities around the world as they navigate risk information, assessing benefits and trade-offs within their own context. Led by Sense about Science (*senseaboutscience.org*), an independent charity that champions the public interest in sound science and transparent use of evidence in policymaking, Risk Know-How is supported by the Lloyd's Register Foundation and colleagues at the Institute for the Public Understanding of Risk at the National University of Singapore. At the heart of this initiative is a commitment to facilitating a meaningful dialog about the gaps between high-level expectations and actual community experiences of risk.

A recent article in *Significance* magazine, "What Is Risk Know-How?" (*www.significancemagazine.com/711*), co-authored by ASA K–12 Statistics Ambassador Christine Franklin, launched the risk know-how framework with accompanying real-life examples and comments from risk and statistics experts consulted in shaping it. Risk know-how is not about getting people to make decisions others approve of. It should, instead, emphasize protection against misinformation and misperception. It should encapsulate the concepts that equip people to access and deal with the same information, even if how they feel about it differs.



Over the last year, Sense about Science staff have been having conversations with community practitioners to gather their experiences and insights on risk and decision-making in daily life. Through this, they have discovered they find each other's insights helpful to such conversations, even when they are dealing with very different issues in very different places.

Working with the practitioners and drawing from their real-world experiences, and in consultation with leading statisticians and risk experts, Sense about Science staff continue to develop the risk know-how framework. The addition of more experiences, insights, and challenges will aid the creation of a supportive platform for practitioner interaction and resource sharing. The platform will also provide useful experiences others can learn from.

Members of the American Statistical Association can help by sharing what tools and resources might be available and, especially, any experiences of testing them with communities. Sense about Science staff need tools that break down the statistical concepts to help people who want to be empowered to weigh reliable information and make decisions in a way that fits their circumstances. They also need resources tailored to people who find themselves at the center of risk discussions in their communities and help others to navigate information. By sharing and testing the framework and adding these experiences, Sense about Science will be in a position to respond to community needs sooner and better.

For each of the concepts set out in the risk know-how framework (*riskknowhow.org/risk-know-how-framework*), Sense about Science staff want to further illustrate them with real-life examples and tools and resources used and tested at the community level. If you can think of such examples, tools, or resources, share them via the form at *https://forms.gle/1ByzkkZKt9N3Eszj6.*

For more information about risk know-how, send an email to *hello@riskknowhow.org*. ■

THE JEDI CORNER

Cochairs Discuss Plans for Student and Young Professionals Committee

This month, The Justice, Equity, Diversity, and Inclusion Corner is spotlighting the incoming cochairs of the Student and Young Professionals Committee—Robert Tumasian III and Lydia Gibson—and asking them a few questions about themselves and their visions for the committee in 2022.

The JEDI Students and Young Professionals Committee will provide an opportunity for students and young professionals (within five years of their highest degree) to gather and discuss their JEDI-related experiences and concerns.

Want to become a JEDI? Join 'The Force' at www.datascijedi.org. *Questions? Send an email to* info@datascijedi.org.

When did you join the ASA and why? Are you affiliated with any ASA sections?

Robert: I joined the ASA last September to build connections with government and industry statisticians, keep up to date with advances in the field, participate in conferences and other professional development workshops, and identify potential career opportunities. I also received the Lester R. Curtin Award to participate in the 2021 Conference on Statistical Practice, which compelled me to get more involved in the ASA. I am a member of the Biometrics Section, Biopharmaceutical Section, Government Statistics Section, and Section on Statistics in Genomics and Genetics.

Lydia: While applying to my master's program last spring, I noticed a link for the ASA on my department's web page. Seeing all the scholarship, internship, and career resources the ASA provides for students was the main reason I joined.

That August, I attended the 2021 Joint Statistical Meetings at the discounted student registration rate and learned more about the ASA; its various chapters, sections, and outreach groups; and other statistical associations such as the Institute of Mathematical Statistics and Caucus for Women in Statistics.

During JSM, I attended a mixer for the Section for Statistical Programmers and Analysts (SSPA) and have continued to attend SSPA meetings throughout the past year. Through their student travel grant, SSPA subsidized my attendance to the 2021 Women in Statistics and Data Science Conference last October, where I was able to meet more extraordinary statisticians, biostatisticians, and data scientists.

Throughout my first semester of graduate school, I have gained valuable insights from the SSPA's career webinar series, including "Landing Your Dream Job in $tatistics and Data $cience" and "How to Choose a Career Path in Statistics/Data Science."

Why are you pursuing a degree in (bio)statistics? Was this always your plan? If not, what changed your mind?

Robert: I have always been captivated by the complexities of mathematics and the medical sciences. When I started my undergraduate studies at SUNY Geneseo, I was a math and chemistry double major on the premedical track, since I was interested in becoming a plastic surgeon. However, after observing several procedures during a fellowship in Portugal, I learned this route was not the best fit for me. I also did not want to abandon mathematics, so I started searching for a field that merged math and biomedical science. After being invited to an outreach conference at Harvard University, I discovered biostatistics—an exciting area that combines my two greatest passions.

I am devoted to a career in statistical drug research. After graduate school, my goal is to join the US Food and Drug Administration (FDA) to strengthen the drug evaluation process and advance

regulatory science from a statistical perspective. I also intend to continue developing and using computational methods to accelerate clinical research and the delivery of safe and effective treatments to individuals in need.

Furthermore, I would like to contribute to enhancing inclusivity in clinical trials, one of the FDA's primary initiatives, which is similar in scope to JEDI's mission. Increased accessibility to clinical trials for underserved populations can be achieved by restructuring trial designs, expanding eligibility criteria, and modifying recruitment methods, and I plan to participate in these vital efforts.

Lydia: My introduction to statistics was in 11th grade, while participating in my school's science research program. My research partner and I worked with a professor at Adelphi University on his research, so to better understand the research methodology, we were given the option to take AP Statistics, which unfortunately met at 6 a.m. during zero period. Although I decided not to continue on with AP Statistics (6 a.m. was entirely too early for my teenage self), my interest had been piqued, so I took several statistics courses while completing my undergraduate degree in economics, including elements of statistics, business statistics, economic statistics, and econometrics.

I have always loved math, AP Calculus having been my favorite course in high school, but I found that statistics—more so than other areas of mathematics—is applicable to all real-world problems, no matter what industry or field you pursue.

I am originally from Long Island, New York, but having lived in Silicon Valley for almost seven years now, I've realized there is more to the tech industry than just software engineers, IT specialists, and computer programmers. There is also an abundance of statisticians and data scientists.

It was never really my plan to pursue an advanced degree in statistics, but I believe my degree program will help me make the career change into tech.

Why did you join JEDI, and what do you hope to accomplish in this role?

Robert: I hope to contribute to eliminating inequities faced in statistics, and I am looking forward to collaborating with Lydia and other JEDI members to design and provide enrichment opportunities for students and early-career professionals.

I am also excited to connect with various ASA affiliates and act as an intermediary to ensure clear communication and transparency between students and ASA executives. I want to maintain strong partnerships between the ASA and external entities, and I hope to forge alliances with additional organizations, like the FDA, to fuel the growth and success of students and the ASA.

Furthermore, through working with students and staff from multiple institutions, I would like to assist in the development of curricula that foster diverse and welcoming learning environments and encourage students to advocate for their needs. I would also like to compile a repository of scholarship and fellowship opportunities for underserved groups in statistics and share it on the ASA website.

Lydia: At the beginning of the 2021 JSM student mixer, Kimberly Sellers, the inaugural chair of the JEDI Outreach Group, gave a presentation outlining the goals and initiatives of JEDI. Realizing they aligned with my own values, I knew this was a group I had to join.

That September, with only 15 minutes to spare before my classes started, I briefly attended JEDI's student town hall to further express my interest in becoming a member of the Student and Young Professionals Committee. I had also just joined my department's diversity, equity, and inclusion action team, so I was really excited to contribute what I've learned in each group to one another.

How can you serve as a resource for students?

Robert: I am always happy to discuss (bio)statistics PhD programs and ideas to increase ASA membership. Additionally, I can provide information about funding opportunities for school or research and scholarships to participate in ASA conferences. I am also available to review and provide feedback on application essays. I can be reached anytime at *ratumasian@gmail.com.*

Lydia: I really want to get more students engaged in JEDI and the ASA, especially undergraduate and master's students. I would like to help facilitate the formation of ASA student chapters and encourage a more diverse array of students to join the ASA by showcasing the benefits of student membership.

I will be a resource for students by pointing them in the direction of useful tools and information about career preparation, internships, scholarships, job applications, and research/fellowship opportunities.

Any of my classmates will tell you I am invested in the success of others, and I want to continue on with that through JEDI. If there is any matter related to JEDI or the ASA that I can help with, my inbox is always open: *l.suzanne.gibson@gmail.com.* ■

Robert A. Tumasian III completed his undergraduate studies in applied mathematics at SUNY Geneseo and has contributed to several collaborative statistical projects at Emory University, Harvard University, and the National Institutes of Health.

After finishing graduate school, Tumasian plans to join the US Food and Drug Administration.

Lydia Gibson is a first-year, master's-level graduate student at California State University, East Bay. She is also the vice president and cofounder of the Cal State East Bay ASA Student Chapter. In her free time, Gibson enjoys reading, watching standup comedy, and listening to podcasts.

State of the Data Infrastructure Series:

Introduction by ASA Director of Science Policy Steve Pierson

Nancy Potok is the chief operating officer of NAPx Consulting. She served as the chief statistician of the United States in the executive office of the president until January 2020, during which time she also served as a commissioner on the US Commission on Evidence-Based Policy Making and co-chair of the Federal Data Strategy.

For the latest State of the Data Infrastructure (SDI) feature, Count on Stats spoke with three experts about the US Census Bureau: Margo Anderson of the University of Wisconsin, Milwaukee, an expert on the history of the bureau and federal statistical system; Allison Plyer, chief demographer of The Data Center and recent chair of the bureau's Scientific Advisory Committee; and Nancy Potok, most recently chief statistician of the US (2017–2019) who, most notably, has also been deputy director and chief operating officer of the bureau and deputy undersecretary for economic affairs at the US Department of Commerce.

The interview took place in early December, with the bulk of the 2020 Census work wrapped up and a month prior to the swearing in of Robert Santos as bureau director. After a decennial census challenged by the pandemic, concerns of political meddling, extreme weather and wildfires, and complaints over its new disclosure avoidance system, the bureau must assess the lessons learned and anticipate unknown challenges to be faced in 2030 while also addressing challenges such as declining response rates and increased demand for more timely and granular data. Anderson, Plyer, and Potok discuss these challenges; the bureau's vulnerabilities exposed in the last several years; and the support needed from Congress, the administration, and data users.

Having witnessed closely the 2020 and other census operations through a pandemic and concerns of outside interference, what stands out to you about the capabilities, challenges, and vulnerabilities for the US Census Bureau?

NANCY POTOK: I have great admiration for the tremendous work of the Census Bureau professional staff through the pandemic, including on the decennial census, and for much of the behind-the-scenes work that took place to keep all the census operations going that is largely unknown to the public. Many congratulations to the staff for that. Because I care a lot about the Census Bureau, I'm going to first share what I see as a major vulnerability in the interest of perhaps helping the bureau and whole federal statistical system become even better.

Here is an illustration of that vulnerability: As the chief statistician of the US in the Office of Management and Budget (OMB) when we were considering adding the citizenship question, many looked to me as the stopgap for the question's inclusion on the 2020 Census. That's because the Paperwork Reduction Act (PRA) gives authority to OMB to approve the content of federal statistical data collections, which should ensure the quality and objectivity of federal statistical programs. The PRA, however, actually provides that authority to the

director of OMB, who generally has delegated that to the chief statistician through the politically appointed administrator of the Office of Information and Regulatory Affairs in OMB. I have no doubt that had the Supreme Court decision gone the other way and I had disapproved the census questionnaire containing the citizenship question, that decision would have been overridden by the director of OMB.

In addition, the secretary of commerce proposed the citizenship question to Congress without notifying OMB, at least through the normal channels by which all the other questions had been sent forward. To protect the integrity of the statistical system from political interference in the future, I strongly recommend strengthening the authority of the chief statistician and modernizing various provisions of the Census Bureau's authorizing statute, Title 13 (i.e., the portion of the US Code on the operations, responsibilities, and authorities of the US Census Bureau).

On the modernization topic, the Census Bureau has done a great job in setting up the household and business pulse surveys and the Frames Program. Both illustrate what the Census Bureau can do and where the Census Bureau needs to be headed from a data standpoint.

One of the strengths of the Census Bureau is its ability to build collaborations with the other statistical agencies. The leaders of the bureau's demographic and economic programs were able to set up and conduct the pulse surveys in partnership with multiple agencies, even when the entire staff was remote due to the pandemic. OMB moved at a rapid speed to approve the surveys. Many of the questions in those surveys came from the other statistical agencies and addressed important questions about the state of the nation during the pandemic, a rapidly changing environment.

I'd like to see more support for the bureau to be able to react quickly and do more of those types of things that inform important policy decisions in a timely way. We shouldn't have to be in a crisis situation for the Census Bureau to get the resources and support it needs to be agile and responsive in areas beyond the decennial censuses.

One of the biggest challenges for the Census Bureau is the need to accelerate its efforts to build a culture that's much more responsive to its users. The bureau needs to be nimbler in terms of its ability to maintain quality of data but still respond to what users want and expect from data and information providers in today's world. It has to move faster to adopt innovative approaches at a pace that keeps up with data innovations outside of government. People depend on census data, but they need it faster and at a more granular level without the quality being compromised.

I think there are several steps the Census Bureau can take to accomplish that. During the last century, the Census Bureau led the way in changing federal statistics; it's time for another major leap forward. For this, the bureau will need a lot of support from Congress and the administration and more partnerships with academia and the private sector, as well as substantial input from the users.

ALLISON PLYER: Let me first commend the bureau. They prioritized science when it came to the 2020 Census data. They did not release data before they felt it was ready and resisted political pressures to do so. I think we should all be relieved and grateful to see they still represent that bulwark.

I also want to echo Nancy's point for providing data faster. We need to realize COVID should be categorized as a disaster. It caused an enormous break in the status quo, followed by dramatic changes in consumer behavior, and now major policy changes for recovery. That means all the things we measure are changing much, much faster. The one-year or more lag in data makes it nonrelevant by the time it's released. We can expect this kind of rapid change for several more years, if not forever. We need rapid statistics constantly now. Consider, for example, monthly poverty estimates. Just like we need good data on jobs being created, we need good timely data on whether government programs are having an impact on poverty. To have a sense of what the current policies are doing for Americans, we need more timely estimates of poverty and income.

For challenges, I think of two things. First is the Census Bureau faced unprecedented challenges with the decennial census, including political interference, the pandemic, and historic weather events.

These challenges raised new concerns about data quality. At the Census Scientific Advisory Committee, we called for radical transparency from the Bureau to keep the country's trust in the face of these unprecedented challenges.

To their immense credit, they have provided a lot of that. Now that the apportionment and redistricting data have been released, we really need to use all the avenues available to improve the data that's going to inform federal funding distribution for the next nine years.

The challenge is that it's the jurisdictions with poorer quality 2020 Census data that need to provide local data to improve the annual population estimates, but neither the Population Estimates Challenge Program, the Count Question Resolution Program, nor Special Censuses have had a lot of return on investment in recent years.

Before 2010, we were able to increase New Orleans's population estimate by 75,000 people, correcting

Allison Plyer is chief demographer and coauthor of *Pandemic to Prosperity,* developed in collaboration with the National Conference on Citizenship to track the impact and ongoing recovery from the COVID health and economic crises. Plyer is also coauthor of *The New Orleans Prosperity Index,* which examines the extent to which economic outcomes have improved for Black New Orleanians since the end of the Civil Rights era.

Margo Anderson, distinguished professor emerita from the University of Wisconsin, Milwaukee, specializes in urban history, particularly of Milwaukee, and the social and demographic history of the United States. She has authored several publications, including the second edition of *The American Census: A Social History.*

estimates that would have otherwise been 25 percent too low. Post 2020, we need an innovative new approach to the Population Estimates Challenge Program that blends several local data sets and methodologies to improve the accuracy of state and local estimates.

The second challenge is declining survey responses. The 2020 American Community Survey (ACS) one-year failure to meet statistical standards is a red flag after decades of declining survey response, and this is going to be an ongoing issue.

The pandemic hindered ACS operations, but the differential response rate by income also widened. Because disasters accelerate preexisting trends, overall survey responses may continue to drop at an accelerated rate going forward, and the likelihood of lower-income households and other hard-to-count populations responding may remain even more diminished.

And it's a broader epistemic challenge for our society. We all know how unreliable political polling has become. The ACS has a sample size greater than 2 million and a big notice on the outside that response is mandatory by law. It is the very last survey that ought to be affected by declining survey response, but it has been. This should concern anyone who wants to know about our people, places, and the economy, and it's why we really need to invest in the bureau.

MARGO ANDERSON: The *Amstat News* data infrastructure series should be seen perhaps as just the most recent step in the American tradition of using statistical information to address the public needs of society. We can thank the framers of the *Constitution* for their insight into the importance of data for decision-making. They addressed the problem of allocating political representation (and originally tax responsibilities) among the states on the basis of a decennial census. In my view, these men embedded the "data infrastructure" in the very foundation of the American state. And they did so before there was much of a statistical profession or rules and procedures of how to do it.

So, given how much is at stake, it's always been a challenge to take the census fairly and efficiently.

Tying into Nancy's point on engaging data users and Allison's point on survey response, the Census Bureau, the American public in their roles as respondents and data users, and politicians and data scientists all engage in a complicated conversation of how to collect information. We have to come to consensus on what to do, who is supposed to do what, and whether the resulting information is good "evidence."

These questions are pretty stark at the moment because the 2020 Census faced unprecedented problems, particularly political meddling with the operational plans for the count by the Trump administration and the pandemic disruption of field administration. We're literally working out answers now about how to use the 2020 Census results for the next decade.

Please elaborate on the support needed from the administration to meet these challenges.

NANCY POTOK: Making the household and business pulse surveys a reality so rapidly illustrates the kind of support the bureau needs to provide timely data. OMB worked really quickly to approve the surveys, making an exception so the bureau didn't have to go out for months for public comment in the *Federal Register*, as is the standard procedure. Money and people also had to be redirected for these surveys to be conducted. However, support for reprioritizing the existing resources for something that seemed to be most critical meant other projects weren't being done.

And what is most harmful to the bureau is the lack of attention it gets between decennial censuses, as if substantial change doesn't need substantial investment. I have not seen innovation take place in the private sector without investment. Why is government supposed to innovate out of thin air?

In the end, lack of timely data hurts the entire nation, so not investing in this is really shortsighted. And many of the innovations would actually save money in the end because getting people to respond to surveys is a lot more expensive than using alternative data sources such as administrative records the government has already spent the money to collect.

Census also needs to have the ability to move more quickly with outside partnerships that would bring innovations. When I was at Census, Congress

granted the bureau new authority to enter into cooperative agreements. The beauty of a cooperative agreement is the ability to move forward in a research partnership without the heavy lift and longtime horizon on the competitive contracting side.

There's also a joint venture authority, which allows you to work with outside private sector or nonprofit partners to do research in the areas Census desperately needs. Because Census is part of the Commerce Department, instead of having its own joint venture authority, it has to go through another bureau in the Commerce Department. That adds layers of red tape that don't need to exist and slow things down.

The same thing with cooperative agreements, there's another bureau Census is required to go through to enter into cooperative agreements, which slows down the process, as well.

These existing authorities can help the Census Bureau react more quickly to the needs of the country for data, but bureaucracy weighs it down. There is a tension between the Commerce Department trying to be more efficient through shared services and the reality of it layering more bureaucracy and actually reducing productivity. What looks good on paper doesn't always pan out in the real world.

I think more autonomy for the Census Bureau to be able to enter directly into these partnerships and move quickly would help with that nimbleness and would probably have a positive benefit-cost ratio for bringing innovation into production.

MARGO ANDERSON: From a historical perspective and lessons to be learned, the interesting thing about the pulse survey is it spoke to an immediate need and the planners were able to deploy a trusted methodology and marshal resources quickly to get the survey off the ground. It also, as far as I can see, didn't generate political opposition. If you look at surveys that have had trouble getting off the ground, you see one of those factors missing, or slowing the innovations.

So, in the 1930s, senior officials in both the Hoover and Roosevelt administrations were not particularly keen on finding out how high the unemployment rate was. What these officials wanted was to get unemployment down, so proponents of the survey had to figure out how to convince them they had a viable methodology and that monthly measurement of employment and unemployment using sampling would provide evidence for workforce policy. That seems like common sense to us now, but wasn't in the 1930s.

ALLISON PLYER: I think that with a little encouragement and investment, the Census Bureau and federal statistical system more broadly could do things that would improve data quality and equity, which would help this and future administrations achieve their goals.

Reporting monthly on median household income and the poverty rate seems like a necessary scorecard if you are trying to raise incomes for working people, which is or should be a bipartisan goal. And data shows concern about poverty can't possibly skew politically as much as some think. As Indi Dutta-Gupta of Georgetown testified to Congress last year, between the ages of 25 and 60, three out of five people in the United States will experience at least one year in the bottom fifth of the income distribution. That's a lot of voters.

What is needed from Congress, particularly as it relates to the vulnerabilities around outside meddling mentioned previously, including the three additional political appointments in 2019 and 2020?

NANCY POTOK: Strengthening the role of the chief statistician is critical. The chief statistician has very little authority. As I mentioned, most of the statutory authority under the Paperwork Reduction Act goes to the director of OMB, a highly political position, which is then delegated to the administrator of the Office of Information and Regulatory Affairs (OIRA), another highly political position, and then trickles down to the chief statistician, leaving little authority except for routine things. The chief statistician position should be built up to give that person authority to make decisions that affect the integrity of the nation's statistical data. Admittedly, given the structure of OMB, that would be challenging to accomplish with a minor tweak.

The inherent weakness of the chief statistician position compares negatively to other countries where the chief statistician has much more authority and independence, such as in Australia and Canada and throughout Europe. We are embarrassingly behind in that respect and should address it. After all, trillions of dollars of foreign and domestic investment in our economy are resting on people trusting the information coming out of federal statistical agencies. If there is a widespread and worldwide perception that the data has been politicized to suit whatever administration is in power, it will have substantial economic repercussions. And clearly, the current safeguards are insufficient.

We need the federal statistical system to be regarded in the same way as the Congressional Research Service, that is, as a nonpartisan information-providing institution. Revisiting the role of the

chief statistician could be helpful in that regard. In addition, if you're looking across the whole federal statistical system, you could start with looking at the Census Bureau as an example.

Congress needs to do a thorough reexamination of Title 13 and provide clarification on several issues to reflect advances in information technology and changing public perceptions on privacy. Without congressional clarification on the privacy protections in the law and whether they are still relevant in today's world of information, important decisions are left to a small group of lawyers in the Department of Commerce.

Consider, for example, whether the Census Master Address File really needs to be 100 percent protected by Title 13. Most of that information is readily available online. Not allowing localities access to check whether the official address list used by the Census Bureau is complete because of Title 13 can result in data inaccuracies down the road. It also causes the government to duplicate address listings across different agencies.

Additionally, the role of the secretary of commerce needs to be examined carefully, which goes back to the quality issues already mentioned as a result of political interference. Currently, Title 13 provides the secretary of commerce enormous authority and discretion over these technical decisions, even though those decisions have potentially major political ramifications.

On the topic of additional political appointees embedded in the bureau, it would be nice to be able to prevent that from happening again. But what is the solution? After all, the Census Bureau is an executive branch agency in a Cabinet department and under the authority of the president.

There was proposed legislation back in 2009 or 2010 that tried to give the Census Bureau more autonomy. One provision in that bill would have allowed the Census Bureau to send its budget directly to Congress without going through the Commerce Department or OMB review. That resulted in a veto message from OMB on the whole bill because executive branch agencies need to go through the OMB budget process and the bill would have set a dangerous precedent.

You could try to pass legislation that would limit the number of political appointees at the bureau, but the administration would most likely veto any legislation that restricted the president's discretion in assigning political appointees to agencies beyond what is statutorily required, such as for an agency head.

In the case of the Census Bureau, after the first legislation was subjected to a veto threat and not passed, subsequent modified legislation was enacted in which the Census Bureau director was given a fixed term and certain statistical competency requirements. That did not stop political interference. But we have seen multiple times in different administrations and across different agencies, it's hard to have a foolproof method for avoiding political interference in an executive branch agency.

There needs to be a real consensus across party lines that having an independent statistical system is a priority, and, so far, that has not materialized in the form of transformational legislation that is enforced by consistent congressional oversight.

MARGO ANDERSON: I believe it's important to understand how we've arrived at the arrangements.

The census is the only constitutionally authorized activity that grounds the statistical system. Everything else is agency derived. With this context in mind, it is important to understand that when the Census Bureau gets a cold, the whole statistical system is under threat. And it raises the question of why the US has such an intricately structured decentralized statistical system.

In principle, the chief statistician is indeed the only locus in the federal government that has the power to intervene in issues like that seen with the citizenship question. However, to Nancy's point about the lack of authority for the chief statistician vis à vis that of the commerce secretary, it is a sign of why it would be very useful to revisit the provisions of Title 13 and try to understand why we have competing authorities in the chief statistician and commerce secretary.

In simple terms, the chief statistician position didn't exist when Congress created a permanent agency for the census in 1902 and placed it in the Department of Commerce and Labor in 1903. The chief statistician position was created almost 40 years later, on the eve of World War II, with the consolidation of activities in the Bureau of the Budget, now OMB.

So, we have these legacies of earlier decisions that need scrutiny, and that, as Nancy said, haven't been looked at for a really long time. So, I agree on the need for Congress to revisit Title 13 and would urge it be done from the perspective of 21st century statistical infrastructure generally.

That's a tall order and will, of necessity, require Congress to address these questions in a broader fashion than they've done, in my view, since the 1970s. Then, Congress spent almost seven years producing major revisions of Title 13, including PL 94-171 and PL 94-521.

ALLISON PLYER: This is more Nancy and Margo's wheelhouse, but I do support strengthening the Census Bureau's independence. As it pertains to

congressional oversight, I will say I've been struck by something else—how much of Congress's discussion of the Census Bureau centers on the per household cost of the decennial. As a data scientist, that is about as irrelevant a statistic as I can imagine.

The Census Bureau's work underpins our democracy—you literally can't have a House of Representatives without it, or an Electoral College. It is getting much harder, not easier, to get people to respond to the decennial and to surveys. And it's getting more expensive. It's not getting less important. Congress ought to just accept that and pay, full stop.

If the federal government distributes $15 trillion per decade based on census numbers, as Andrew Reamer counts, don't they want that to go to the right places? And then when you look at even more trillions of market dollars moved by economic indicators produced by the Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics, it just makes good business sense to invest in statistical excellence, to optimize private investment decisions, if for no other reason.

And with global capital so relentlessly mobile, the reputation we have for statistical quality and independence is a strength of our markets compared to say, China's. To maintain that edge, and to do what Madison suggested and mark the progress of our society, I think Congress ought to be demanding more excellence, innovation, and speed from the bureau and the statistical system and investing to make it possible.

During the 2020 Census process, there were concerns about the new disclosure avoidance system and its reliance on differential privacy. What needs to be done by 2030 or in the shorter run for ACS and other products? What do you think needs to be done around the GIS for the next decade?

NANCY POTOK: Fundamental to this discussion is the question, "How good is good enough?" We know statistical data is never perfect. There's always some range of error in it. It would be useful if there was consensus on the tradeoff between first the privacy and confidentiality risks, meaning the reidentification of individuals and businesses in the data; second, the rapidity at which the data can be collected and disseminated and its related utility, because if it is published too late, it's not relevant anymore; and third, the accuracy of the data, which also affects its utility and fitness for various purposes. Who's deciding that right now?

The Census Bureau needs to put together a standing outside group on disclosure avoidance to help them decide the tradeoffs between the utility and accuracy of the data and the risk of reidentification, as well as the speed at which data needs to be disseminated. Those decisions should not be made entirely by a small group of people within the Census Bureau. Establishing an outside stakeholder advisory group providing serious advice on disclosure avoidance would be a huge cultural change for the bureau.

However, data users and representatives of the public should be able to weigh in meaningfully and substantially on something as important as the necessary level of privacy protection in comparison to the utility of the data. Census needs an advisory committee with that kind of punch.

While the bureau attempted to do this with the 2020 Census data, it was a difficult, frustrating process riddled with trial and error. I give the bureau high marks for trying to be as transparent as possible, but there has to be a more institutionalized approach going forward, as the issues are not going away with the 2020 Census.

As society changes, the context for privacy changes, and as technology changes, the infrastructure should be there for the Census Bureau to make decisions that serve the people.

I would also suggest the bureau continue to explore alternatives to differential privacy. I think the bureau knows it is not the only path to providing the public with access to important data. For example, improving secure access to data would help a lot, including but not limited to substantially modernizing the federal statistical research data centers and making statistical data more readily available in

other venues that don't require a lengthy and expensive background check just to access data. The whole federal statistical system needs to take on that modernization.

The bureau also should move expeditiously to implement a meaningful tiered access system for census data and be more generous in making data available through secure infrastructure run by organizations other than the Census Bureau, which now happens very sporadically. These actions are not only good practice, they are a fundamental piece of the Evidence Act. And that is just one more reason why Title 13 needs to be revisited, to make sure it is in harmony with the need for solid, evidence-based policymaking.

MARGO ANDERSON: Right now, it is only the Census Bureau. Users are challenging the bureau's approach. Congress has yet to do so, but I suspect that will come, too.

I've been trying to broaden the framing of the issues of disclosure control and talk less about "privacy" and more about "data stewardship." Stewardship implies the issues of how information, once collected, is coded, curated, saved, published, and explained so it can be used. It allows us to ask, "Who is the steward?" "Who is responsible for doing what?" This should be a much more complex conversation with professionals, users, and respondents. Reluctant respondents instinctively allude to these issues when they express resistance to responding, and in my view, may also be claiming the right to be part of the "stewardship" decision-making as well, for example, to ask what other sources of information can or should be accessed. I see the issue of the decline in survey response as part of a reexamination of data stewardship.

ALLISON PLYER: As Jeri Green of the Urban League observed in another context, census doesn't lose people's trust by admitting to shortcomings; it's the opposite. The Census Bureau accomplished something difficult: It built an algorithm in public for disclosure avoidance, reflecting public values, and received input from its most severe critics in setting the level of privacy loss. They've implemented disclosure avoidance in the past, but never in such a transparent way. The promise of the system they went with for 2020 was a quantifiable and transparent allocation of privacy loss.

This system is not perfect, and there are more difficult decisions ahead about privacy settings for later data products. Going forward, there are other approaches we also ought to be thinking about. For example, the private sector is using synthetic data for investing and planning without hesitation. We probably need a lot of changes in how we develop our census data in general that may make the debate about disclosure avoidance very different in a few years.

Nancy, you were instrumental in the ASA Task Force on the 2020 Census Quality Indicators, not only leading it but calling for such an effort with others in late summer 2020. Looking to the 2030 Census, how can the bureau, Congress, and the administration be prepared to facilitate earlier assessment of the data quality?

NANCY POTOK: First, I encourage everyone to read both the October 2020 report and the September 2021 report produced by the task force. Both reports contain several task force recommendations, which include the need to have an earlier assessment of the census quality in 2030.

We recommended that the Census Bureau be forward-looking and open to new approaches, including greater transparency for the operational data at low levels of geography. The bureau collects operational data in real time, such as whether a household has self responded, its information was collected by an in-person interview, or its information had to be included through a proxy interview.

There is often a gradation of quality in the responses, if they are collected by proxy relative to information provided directly by the residents of a household. It is helpful to know whether such indicators are clustered, and this is indeed knowable and should be publicly available before the numbers are released. Additional information, such as where statistical imputation was used to fill in missing data during processing, should also be available. The bureau now has the technology to do this and can plan for it in 2030.

In addition, the task force wanted to see more transparency around the quality of administrative records used and where they were used. Administrative records had a big impact during the 2020 Census, and the bureau needs to start now to make sure relationships are in place to maximize the use of records for 2030. That includes relationships with other government agencies and institutions outside of government, such as universities. But these relationships are built on trust and mutual benefit, so it is important that institutions in particular can see the value of the relationships before they end up potentially undercounted in 2030.

The Census Bureau seemingly feels constrained by Title 13 in terms of releasing some of the operational data, but that constraint is subject to interpretation. One of the recommendations of the task force was to reexamine Title 13 to both increase the independence of the Census Bureau and address these grey areas of what actually is needed to protect confidentiality. Outside the Census Bureau, I'm not sure many people believe this operational data or paradata requires the same level of protection as the actual personal data from a household. I hope Congress takes this up in a reexamination of Title 13.

The so-called gold standard of assessing quality is the post-enumeration survey conducted by the Census Bureau, which is ideally conducted in parallel with field operations. The processing of that survey can be sped up considerably, and the bureau should prioritize work to make it available much sooner. Because that survey was at the heart of some controversy in 2000, its timing was pushed back and size reduced in 2010. That's not a reason to delay it into perpetuity. The public deserves to understand the quality of the data coming out of the census in a timely way, not years later.

There are some other files the bureau could make available sooner if it would prioritize the processing of these data sets. That would help interpret the demographic analysis and population estimates as quality benchmarks, as well. Census, the Commerce Department, and Congress should make it a priority to provide the resources to get this done.

To close, please summarize the Census Bureau's health, resources, and state of data infrastructure.

ALLISON PLYER: The 2020 Census was not the best census ever, but it was no doubt the best count possible under very difficult circumstances. Bureau staff are tired, and no wonder. The 2020 Census didn't fix the historic undercounts of people of color, the indigenous, or people in rural areas. And with the differential nonresponse in ACS data, our statistics are starting to skew to make Americans look wealthier, whiter, more likely to be married, and more likely to own homes. Compounding the problem is that all these "easy-to-count" people are already in administrative records and the private sector is keeping track of them just fine.

Going forward, we need to figure out how to get good data on the hard-to-count, and we need that data on a more frequent and timelier basis. If we don't focus on changing how we gather data so we prioritize marginalized groups, we will lose the values added by public statistics: universality and fairness.

MARGO ANDERSON: I'd return again to the fundamental need for good information to ground democratic decision-making. That base understanding sometimes gets lost in the day-to-day processes of appropriations and budget writing. Congress hears agency officials asking for money or pointing out the erosion of budgets over time. They hear agencies touting the promise of their latest scientific innovation if there was just more money. They hear about how much trouble the agency faced taking the 2020 Census.

To focus the resource "ask," one should nevertheless acknowledge the 2020 Census got done. We reapportioned, we are redistricting, and we're going to use this information for the next 10 years. So, it's time to think forward, if you will, and acknowledge that the statistical infrastructure the country has constructed for 200+ years made it possible to do that. Now we need to figure out how we're going to envision what's next and pay for it.

NANCY POTOK: My bottom-line message is that the Census Bureau is one of the country's great resources. It is critically important in understanding where we've been and where we're going as a nation. As the world changes, the Census Bureau needs to be given the resources, legal authorities, and tools to continue to be a trusted resource for understanding our country, economy, and people. The time to do that is now. ■

Celebrating the Life of
ANNIE T. RANDALL

Remembrance by **Kimberly Flagg Sellers**, professor of mathematics and statistics at Georgetown University and principal researcher at the Center for Statistical Research and Methodology Division of the US Census Bureau.

Annie T. Randall and I met four years ago. The movie *Hidden Figures* had been released and Randall was giving a talk at an area library about her experiences as a hidden figure, herself, serving as a government biostatistician with the National Institutes of Health.

As a Black female statistician, learning of her existence was *huge*. She's what I like to call "an outlier personified." She was yet another example showing that *we exist!* I was so elated at the idea of meeting Randall and hearing her speak that I arrived an hour early (even beating her family's arrival) and took a front seat. I was able to speak with her both before and after the event. What a woman! The stories she told about her life were humbling and relatable in so many ways. We even shared common business acquaintances.

At that moment, Jeremiah 29:11 was prominent in my mind: "For I know the plans I have for you, declares the Lord." God's plans were made clear: to use my position as then chair of the American Statistical Association's Committee on Women in Statistics to *make sure* the statistics community knew the name Annie T. Randall and her contributions to our discipline.

For the next four years, I publicized Randall's name and work wherever possible. She was twice featured in *Amstat News*. She was also among those featured on Mathematically Gifted and Black (*https://mathematicallygiftedandblack.com*).

As a result of those efforts, an ally in the field reached out with the idea of naming a newly established innovator award for early-career biostatisticians after Randall. The first recipient was recognized during the 2021 Joint Statistical Meetings on August 9—one week before Randall's passing. Knowing Randall was able to see this moment come to fruition and to have her family represented and giving remarks were historic and emotional.

I am honored to have had the opportunity to know and thank Randall for all she did, and to give her flowers while she was here. On behalf of all statisticians, particularly those who are underrepresented, thank you to Randall's family for sharing her with us. Rest assured, she is hidden no more and her name will live on!

Annie Mae Turner Taylor Randall was born in the middle of the roaring '20s, on January 22, 1925, in Greenwood, South Carolina. Born to the late Joel Turner and Sarah (Chin) Turner, Annie Mae dropped the "Mae" when she entered the workforce with the US federal government.

Growing up in a segregated Washington, DC (what is now Capitol Hill), Ann met friends for life on "3rd and G Streets, Northeast." She attended public school and earned straight As, even skipping the eighth grade. She graduated from Dunbar High School and took undergraduate and graduate classes at American University and the US Department of Agriculture.

Ann began her government career at the US War Production Board during WWII. Early in her career, she also worked for the United States Navy and Air Force. Ann was one of the early "Government Girls," a term coined during WWII when the federal government hired women to fill roles during a labor shortage. Not only was Ann a woman in the workforce during the 1940s and '50s, she was also the first professional African American to work in several government agencies. She excelled, despite facing blistering discrimination and overt racism, including a supervisor ordering that his desk be turned away from Ann so he "didn't have to look at a n——." Tenacious and resolute in her commitment to excellence, Ann continued to deliver outstanding results in spite of the circumstances she faced.

Like Katherine Johnson in the film *Hidden Figures*, Ann loved and excelled at math. A trailblazer in her own right, Ann was a mathematical statistician at the National Institutes of Mental Health (NIMH) in the Theoretical Statistics and Mathematics Branch. She was responsible for the calculations behind the book *Human Aging*, published in the late 1960s and still used today for behavioral and biological studies. At NIMH, Ann used one of the first mainframe computers and the Friden calculator (featured in *Hidden Figures*).

Health Statistics Section to recognize early-career statistical innovators. The award was presented on August 9, 2021, to Loni Tabb, a biometric statistician and associate professor at Drexel University.

Ann received numerous letters of commendation from multiple sources, including the University of Pennsylvania and National Academy of Sciences. Ann's story is also the subject of a 2016 doctoral dissertation by Aura Wharton-Beck of the University of St. Thomas-Minnesota.

Ann met the love of her life, William "Sonny" Randall, in 1953, and they married in 1957. Their proudest moments were the successes of their daughters, Susan and Laura, and the birth of their five grandchildren. Ann and Sonny were known for cookouts at their home, which were famous for their delicious food, side-splitting humor, legendary stories, and impromptu talent shows.

One of Ann's celebrated milestones and highest recognition came in an academic award that bears her name. The Annie T. Randall Innovator Award was established in 2020 by the ASA's Biometrics Statistics Section and is cosponsored by the Mental

Ann is known for her smile, laughter, humor, and hats—all worn with her one-of-a-kind style, grace, and poise. Indeed, she has been called the "Silver Fox" and "Life of the Party." "Ma," as she is affectionately called by extended family and the friends of her children and grandchildren, has been a mother to many people over the years. Hers was the "Kool-Aid" house, where all the neighborhood children wanted to be and friends and relatives always wanted to go. There, they knew they would find fun, food, fellowship, and—most of all—love.

Ann passed away on August 16, 2021. She enjoyed spending time with family, laughing and telling stories, sharing life lessons, listening to 'oldies' and Motown music, talking on the phone, going on 'field trips,' shopping, and waiting for items ordered from her favorite stores to arrive. Indeed, she lived a rich, long, joyous, and active life filled with love, laughter, family, and friendship. ■

MORE ONLINE
Read more about the accomplishments of Black scholars in the mathematical sciences at *mathematicallygiftedandblack.com.*

Celebrating BLACK HISTORY MONTH

In celebration of Black History Month, we recognize the innovative mathematical statistician Annie T. Randall along with 11 individuals from the black/African-American collective who have made tremendous contributions to the field of statistics. The 12 featured individuals have made significant achievements as professors, researchers, volunteers, and health care professionals. Read their biographies at Amstat News online to learn more about how they entered the field of statistics, what they've accomplished, and the role of mentoring in helping build their professional careers. *https://magazine.amstat.org*

Adrian Coles

Math and science were always Adrian Coles's favorite subjects growing up in a socioeconomically disadvantaged community in southern Virginia. After serving nine years in the US Marine Corps, he attended The University of North Carolina to become a high-school math teacher. However, he fell in love with statistics after he took a course his senior year and saw the wide range of real-world problems the discipline helped solve. Eventually, he earned his PhD in statistics from North Carolina State University and became the first African American male to earn the degree from the time-honored department.

Rhonda D. Fitzgerald

Rhonda Fitzgerald followed in her father's footsteps and earned her undergraduate degree in mathematics. After a family friend told her about this 'new' field called biostatistics, she propelled her journey forward and became the second African American to complete her PhD in biostatistics from Virginia Commonwealth University. Rhonda has received many awards and accolades as a tenured professor, but she is most proud of the relationships she has formed with her students and the impact she has made on their lives.

Melody Goodman

Melody Goodman began her undergraduate studies as a pre-med student. During her first semester, she heard senior pre-med students talking about cat lab, where you dissect a cat, and she dropped the pre-med major the next day. After a long period of being undecided, she changed her major to applied mathematics and statistics. She fell in love with combinatorics and game theory and eventually landed a job on Wall Street; she didn't like it. After googling "math in health" she learned about biostatistics and went to graduate school. She is now the associate dean for research and an associate professor of biostatistics at the NYU School of Global Public Health and working to educate the general public about quantitative public health data literacy and expose racial and ethnically diverse students to biostatistics and data science.

Brittany Dane Green

Brittany Green grew up in a rural town in Alabama and had a phenomenal teacher who piqued her interest in math. She wrestled with how to combine her interest in math with her passion for social justice until she discovered data science and statistics. After observing media and academia tout the benefits of machine learning models without regard for how they can negatively affect certain populations, she was drawn to exploring how these models can be used to positively affect society. Now, she contributes to the field of digital technologies and social justice as an assistant professor in information systems, analytics, and operations.

Renee H. Moore

Reneé Moore attended Bennett College in Greensboro, North Carolina—a small, historically Black, women's college. She loved teaching and declared three majors: mathematics; secondary mathematics education; and psychology. One summer, she participated in the Harvard Summer Program in Biostatistics and the United Negro College Fund Mellon Mays Undergraduate Fellowship Program, which set her on the path to becoming a biostatistician. Moore is currently a research professor at Drexel University; director of the Biostatistics Scientific Collaboration Center; and director of Diversity, Equity, and Inclusion for the department of epidemiology and biostatistics.

Sharina D. Person

Although neither Sharina D. Person's parents went to college, they strongly encouraged her to attend. She majored in math, but realized she wanted a career that allowed her to help society. Fortunately, she was introduced to biostatistics and found her passion. For the last 20 years, Sharina has enjoyed a research career that directly affects the lives and well-being of society, in particular population health and health equity. Another of her passions is seeing the light bulb come on in a student, mentee, or colleague's eyes when she has explained a difficult statistical concept in a way they can comprehend.

Alisa Stephens-Shields

Through various games and activities, Alisa Stephens-Shields learned she enjoyed problem-solving and finding patterns. And a summer job in the lab of a theoretical ecologist gave her the thrill of contributing to knowledge through research. Therefore, after a gap year that included a six-month community service immersion in Costa Rica, she enrolled in the doctoral program in biostatistics at Harvard University and is now an assistant professor in the department of biostatistics, epidemiology, and informatics at the University of Pennsylvania Perelman School of Medicine.

Briana Joy Stephenson

Briana Joy Stephenson's older brother unknowingly motivated her, as she challenged herself to master everything he learned so she would be competitive during their family *Jeopardy* games. This competitive spirit transcended into school, where she excelled in the classroom and eventually received the Top Flight Senior award at her tech magnet high school and a scholarship to the Massachusetts Institute of Technology. Now at Harvard T. H. Chan School of Public Health, Stephenson reflects on her circuitous yet intentional professional journey and is most proud of the influence she has had on the young women who follow her and have the confidence and encouragement to pursue the road less traveled.

Loni Philip Tabb

Loni Philip Tabb, originally from Philadelphia, Pennsylvania, started college as a business major but later changed to math. While earning her graduate degree, she was introduced to biostatistics and was in awe of how such a field could exist that blended her love of numbers and storytelling. After completing her PhD, Tabb returned to Drexel University as an assistant professor of biostatistics and, in 2017, was promoted to associate professor and awarded tenure, reflecting her dedication to excellence in teaching, service, and cultivating a diverse and inclusive environment, in addition to her research. She is the first recipient of the Annie T. Randall Innovator Award.

Therri Usher

Therri Usher always enjoyed mathematics, even competing in competitions during high school. Despite this, others encouraged her to pursue a career as a medical doctor, so she entered college as a pre-med student. However, when she was offered the opportunity to work in a biology lab researching sickle cell disease and conducting data analysis, she changed her major to biostatistics with a specialization in statistics. After completing her PhD, Therri joined the US Food and Drug Administration, where she applies statistical theories and methods used in the regulation of drug products to treat viral infections and rare diseases.

Sydeaka Watson

Sydeaka Watson began her college education as a mathematics major at Dillard University and University of New Orleans in her hometown of New Orleans, Louisiana. The introductory statistics course she took as an elective became one of her favorite courses and she eventually earned her PhD in the field. Since then, she has experienced professional experiences as a professor, biostatistician, data scientist, and consultant. Watson has supported and led STEM diversity efforts as chair of the ASA Committee on Minorities in Statistics, co-organizer of the Dallas chapter of Blacks in Technology, and organizer of the Dallas chapter of R-Ladies Global. ■

STAT*tr@k*

Statistical Consulting Clients: How to Get and Keep Them

Melissa Kovacs, PStat®, is the founder of FirstEval, a statistical consulting, program evaluation, and litigation support firm. Her clients are in the social and public sectors and also include hospital systems, attorneys, and marketing firms.

If you're a statistical consultant, or you want to be a statistical consultant, how will you build and maintain a client base?

I've found the most common way for statistical consultants to get clients is through word-of-mouth referrals. While some consultants advertise, specifically in niche areas to niche audiences, most of us get clients because someone recommended us.

How to Make It Happen

I have six thoughts about your obvious next question: How can I get personally recommended for statistical consulting work? My thoughts here span from the origination of your business cycle to your work with your clients. Here we go:

1. Networking. This word doesn't have to lead to a pit in the stomach of your introverted, statistician self. This isn't as bad as it sounds. Networking is as simple as telling everyone you know that you are a statistical consultant. Speak it into existence. Announce it on LinkedIn and other social media platforms, tell your friends, tell your family, and tell your professional colleagues you are looking for projects. You would be surprised whose colleague's roommate's girlfriend's colleague is

looking for a statistician. If you're bold, join a networking group in a particular area—maybe a group for women, tech people, data visualization lovers, or R lovers.

2. Market yourself. If you are as intimidated as I am by the mere mention of "marketing," reframe your thinking to view marketing as relentlessly helpful and actively solving people's problems. You don't have to think of it as placing ads on Google, but do educate yourself about what it is. As a statistical consultant, the majority of your marketing will encompass talking to others about what you do (see #1) and providing helpful ideas to solve business problems using statistics.

3. Treat your consulting like a business, because that's what it is. All those biostatistics, applied econometrics, and statistical theory courses will only help you with your actual client work, not with building and maintaining a client base. You are officially in the business world now, so immerse yourself in it and embrace it. I recommend not assuming you can just "figure it out" without some help and education. Attend a business boot camp. Take classes for entrepreneurs at your local library. Read some Dorie Clark books. Steer your podcast list toward advice for business owners, entrepreneurs, and consultants. Find other consultant pals (even if they're not statisticians) and form a mastermind group. You don't need to go get an MBA; the information and help is out there for free in your community and online.

4. Consider your brand. As a statistical consultant, you do have a brand. What is your brand? Give this some serious thought. What do you do that signals your brand to your client? Is it high-quality statistical consulting? (Yes, please). Is it the professional data visualizations and graphics you deliver with your end product of results? Is it your quick online helpfulness with R coding challenges? Is it your witty repartee on Twitter? Is it your go-to blog posts? Is it your friendliness and ease of doing business with? Is it your helpful monthly newsletters? Is it your nerdiness with a slight touch of humor? Is it your blunt honesty when delivering results? Is it your local community ties? Is it your trustworthiness or remarkable attention to details? All these are a brand—are they pieces of your brand? Consider what speaks to you and what you want to be known for.

5. Listen. This is the most important item on this list, and probably should have been first. Once a client engagement originates, a statistical consultant should be in listening mode from start to finish. From that first phone call and initial client meeting, the consultant should be listening carefully to understand and recognize the unique situation and data story of their client. Remember this is part of marketing—actively listening to find and solve people's problems and the problems in their organizations (using statistics, of course). Recognizing the problems of people and their organization's requires empathy, which requires listening. Your clients may not know what they need, but if you listen long enough, you'll know. Or, they may think they know what they need, but after careful listening, you may be able to offer a better solution to their problem.

6. Integrity. After careful listening, you may realize you are not the right consultant for a person or company. Their project may be too much of a stretch for you, you may not have time to deliver a high-quality product within their timeline, or the topic isn't exactly a space in which you feel comfortable providing advice. It is perfectly fine to decline a project for these reasons, or in any situation you don't feel you can deliver high-quality work. Be honest and be yourself in these situations. Even if you lose some income in the short term, you'll gain integrity and respect in the long term.

All these factors combined with your rock-solid knowledge of applied statistics sum to an incredible statistical consultant—one who will be asked to return for more work and one who will be recommended by past clients to new clients. ■

STATS4GOOD

The ASA Committee on Professional Ethics: PROMOTING DATA FOR GOOD

With a PhD in statistical astrophysics, **David Corliss** is lead, Industrial Business Analytics, and manager, Data Science Center of Excellence, Stellantis. He serves on the steering committee for the Conference on Statistical Practice and is the founder of Peace-Work, a volunteer cooperative of statisticians and data scientists providing analytic support for charitable groups and applying statistical methods in issue-driven advocacy.

Welcome to 2022 and a new year of promoting and facilitating Data for Good and sharing stories from practitioners. This year, Stats4Good will feature a series of columns focusing on the many ways the functions, committees, events, committees, and groups within the American Statistical Association support this important work. The first stop on our tour is the Committee on Professional Ethics (*https://community.amstat.org/ethics/home*).

Perhaps best known for developing, maintaining, and publishing the ASA's Ethical Guidelines for Statistical Practice, the committee's mission includes a number of other important tasks. Its members serve an important pedagogical function, educating ASA members about ethical issues in statistics and conferring with the ethics organizations of other professional societies in areas such as law and medicine.

The committee has nine members appointed by the ASA president-elect for three-year terms. The scope of the committee's work is clearly defined, and there are limits in place. While they do educate about ethical practices, the committee members do not offer a certification or serve as judges or arbiters of ethical questions. Updates to the guidelines are developed and submitted by the committee, which the ASA Board must approve.

The centerpiece of the committee's work is the Ethical Guidelines for Statistical Practice (*www.amstat.org/asa/files/pdfs/EthicalGuidelines.pdf*), a practical handbook for ethical practice and a guide for what to watch out for in our own work and that of others. It's not a statistical—or even a scientific—document, but rather a sociological one, describing the social contract in which we engage as statisticians. The language is designed to facilitate practical application, describing the actions of 'the ethical statistician.'

As I have written before, the key to communicating ethical behavior is in the adverbs employed. Ethics are not found in the verbs—not what we do—but rather the manner in which we do. The ASA's ethical guidelines carefully observe this practice. As one example, we read in Section A at #7, "The Ethical Statistician … Exhibits respect for others and, thus, neither engages in nor condones discrimination based on personal characteristics; bullying; unwelcome

physical, including sexual, contact; or other forms of harassment or intimidation." This is not a statistical statement, but rather a description of how statistical practice should be conducted.

My goal, both as a statistical professional and a column writer, is to make Data for Good *normative*—simply an ordinary part of a statistical career.

One application of the guidelines that deserves more notice is the role it can play to benefit organizations employing its benchmarks, whether in industry, academia, government, or other areas. We can promote the use of the guidelines where we work, partner with human resources to advise on our organizations' standards. They can be taught to staff members and used in recruiting, where potential staff and students will be glad to know ethical practices are codified and earnestly followed.

The ASA's ethical guidelines are a living document, subject to development to keep up to date with the evolution of statistical practice. They were most recently updated by the committee a few years ago, and the revisions were approved by the ASA Board in April 2018.

For my part, if there were something I could add to the guidelines, it would be stronger encouragement to participate in Data for Good. These activities are promoted by the ASA in a number of ways, and the practice of statistics and data science for the greater good is the main focus of many ASA members' careers. However, various statements supporting this work are found in the ethical practices of many other professional organizations, from the American Medical Association to associations for accountants and architects. I wouldn't go so far as to make it a requirement, as the American Bar Association does with at least 50 pro bono hours a year expected. But perhaps a statement could be added to call out statistical practice for the greater good as a worthy pursuit in keeping with the ASA's stated mission "to promote the practice and profession of statistics." Read through the guidelines and consider what changes you would advocate for.

Getting Involved

In opportunities this month, check out Kaggle's open data sets page (*www.kaggle.com/datasets*). The competitions may have come and gone, but the data is still available to support development of your own solutions. Top trending data sets include D4G opportunities for biostatistics of cardiovascular health, updated country-level economic data from the Maddison Project, and the COVID-19 Open Research Dataset Challenge.

This column exists to support and lift up D4G activities for all ASA members—and, indeed, for all analytics professionals. My goal, both as a statistical professional and a column writer, is to make Data for Good *normative*—simply an ordinary part of a statistical career. That doesn't mean everyone is going to be engaged, but it does mean conversations about our own particular engagement in D4G can be an ordinary part of the ASA experience and a mode and model for a productive career.

In the multitude of ways analytics professionals participate in this work, Data for Good isn't all we do, but it is the best of what we do. All of us can support and share the work of the ASA Committee on Professional Ethics. ■

The Demand for Literacy Training on Quantitative Public Health Data

Jemar R. Bather, Janice Johnson Dias, and Melody S. Goodman

Jemar R. Bather (*@jemarbather*) is a biostatistics PhD candidate at Harvard University.

Janice Johnson Dias (*@DrJaniceJ*) is a cofounder and the president of GrassROOTS Community Foundation. She is also an associate professor of sociology at the John Jay College of Criminal Justice.

Melody S. Goodman (*@goodmanthebrain*) is the associate dean for research and an associate professor of biostatistics at the New York University School of Global Public Health.

The global pandemic increased the public's demand for information. Almost daily, media and policymakers present numbers on testing, deaths, hospitalization rates, and vaccine distribution. This information often includes data visualizations and tables viewers must interpret to better understand the pandemic's scope and its impact on local communities and countries worldwide. As a result, there is a need for a new vocabulary (e.g., flattening the curve, epidemiology, public health, pandemic) around public health and data literacy.

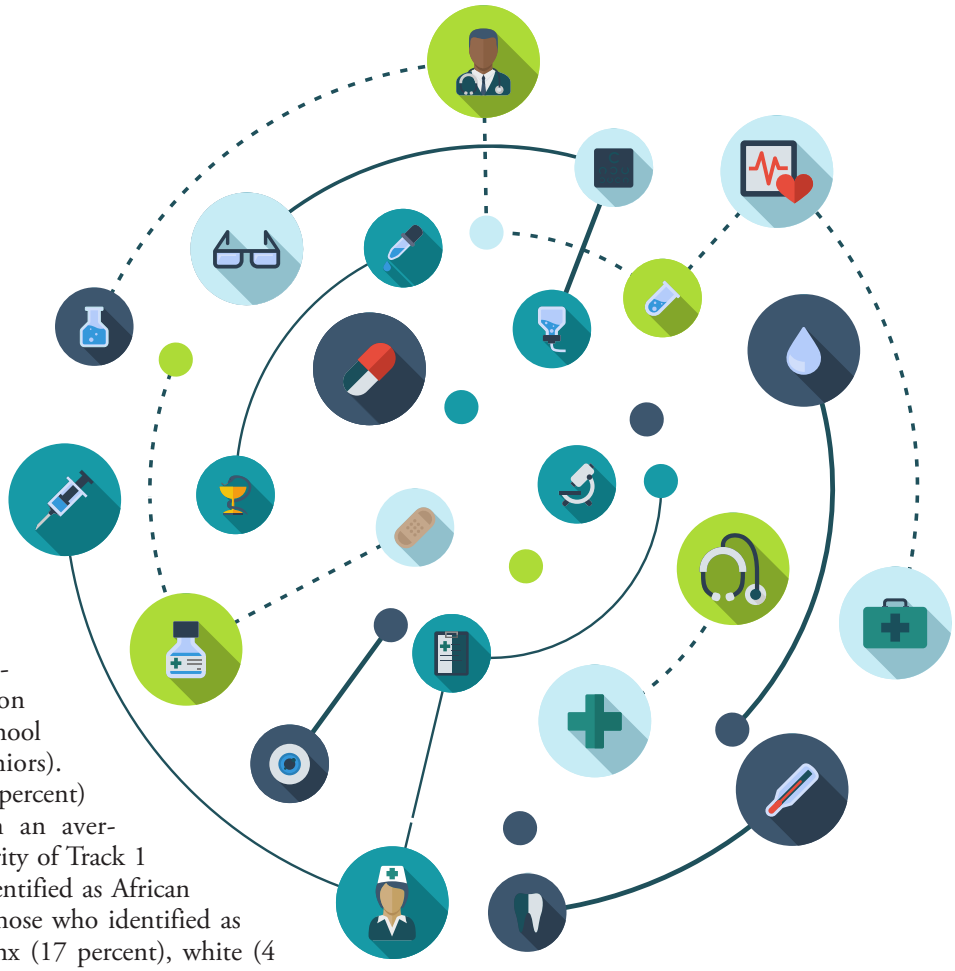
This daily influx of data exposure happens at a time when the average person in the United States has difficulty comprehending the data's meaning or practical implications. In the most recent iteration of the *Programme for International Student Assessment*, a global assessment of 15-year-olds, the United States ranked 37th in math out of 79 countries and economies. The US had a score of 478, while China (591) and Singapore (569) had the highest [scores]. This study assesses whether 15-year-olds possess the necessary skills for full participation in social and economic life. The findings demonstrate US residents lag their global counterparts in quantitative literacy.

Increasing quantitative literacy training will bolster the knowledge of people in the United States and equip them with tools to become healthier now and in the future. Additionally, data literacy will provide US residents with information about how specific racial and ethnic groups experience health disparities. According to data from the Centers for Disease Control and Prevention, COVID-19 is yet another example of an infectious disease in which Native Americans, African Americans, and Hispanics are more likely than whites to be hospitalized or die because of the virus. There are many other diseases that provide similar data (e.g., chronic, sexually transmitted), but the average person in the United States may not grasp the depth of these inequities and, furthermore, may not understand phrases commonly associated with these diseases (e.g., risk factor, confounder). This lack of understanding is likely to stymie their ability to be empathetic and advocate for structural changes, as well as inhibit their ability to make informed decisions.

To address the gap in both quantitative literacy and public health disparities, we developed the Quantitative Public Health Data Literacy (QPHDL, *bit.ly/3KnxILm*) course during the pandemic (summer 2020). QPHDL introduces students to the foundations of public health and teaches data literacy, statistical analysis software, and data ethics.

We received 695 applications for the first cohort of the QPHDL in 12 days (June 26 – July 8, 2020), with no money spent on advertising. Most of our applicants were beginners in quantitative data literacy, but they were all eager to learn.

Originally intended to serve Black girls in high school and college, this program quickly grew in popularity across ages, genders, and races. As expected, most of the applicants were girls/women (74 percent), African Americans (43 percent), and current students (80 percent). Of the 695 applicants, 46 percent were under the age of 20, 35 percent were between the ages of 21 and 30, and 20 percent were over the age of 30. In terms of race, 43 percent identified as African American, 30 percent as Asian, 12 percent as Latinx, 7 percent as white, and 6 percent as multiracial/other.



We differentiated our course offerings due to the range of ages and education levels. In summer 2020, we offered Track 1 to 55 high-school students and 188 college undergraduates, with representation from each level (high-school freshman to college seniors). Most of this cohort (73 percent) were girls/women, with an average age of 21. The majority of Track 1 students (44 percent) identified as African American, followed by those who identified as Asian (30 percent), Latinx (17 percent), white (4 percent), or multiracial/other (4 percent).

The second cohort (Track 2) trained during Black History Month (February 2021). The application was live for 13 days (January 9 – 22, 2021) and received more than 300 submissions in the first three days. Like Track 1, the majority of applicants were girls/women (83 percent) and African Americans (54 percent). Track 2's average age was 32 years old.

With 858 total applications and the course initially designed for general audiences, it was striking to see a substantial percentage of our applicants were in school (49 percent; in high school, college, or graduate school) or worked as a public health professional (37 percent). Clearly, there is a population seeking to increase their data literacy outside the classroom and workplace. Additionally, we received nearly 200 international applications, suggesting a global demand for data literacy training.

The results from the evaluation of our program are forthcoming, but the growing number of applications for future iterations of the program demonstrates the added value we provide to people all over the world. As the world adapts to the current and future pandemics, we will continue to train people of all ages, genders, races, and ethnicities to synthesize quantitative data and translate it for their communities. As a result, disadvantaged populations will be better prepared to engage in public health research as partners, rather than participants. We implore nonprofit organizations, educational institutions, and private companies to join in this effort by pooling resources and developing programs like the QPHDL. ■

JSM 2022 Late-Breaking Session Proposals Due April 15

Ming-Hui Chen, JSM 2022 Program Chair

MORE ONLINE
Visit the online programs on the JSM website at *amstat.org/meetings/jsm/2022/program.*

The JSM Program Committee members began scientific program planning in July 2021. By now, most technical sessions for JSM 2022 have been organized; however, there is still an opportunity to organize one of two late-breaking sessions, which focus on emerging developments of our discipline and are likely to attract a large audience.

A late-breaking session addresses one or more technical, scientific, or policy-related topics that have arisen in the one-year period prior to JSM. These are hot statistical issues and/or pressing contemporary issues in statistical data science.

The competition for late-breaking sessions is open to any member or organization of a partner society. The proposals will be judged on statistical and scientific quality, novelty and timeliness of material, potential audience appeal, and completeness.

Recent Late-Breaking Sessions

To give you an idea of the type of sessions being selected in recent years, here are a few late-breaking session titles:

- Human Trafficking Analytics in the Age of COVID-19 (2021)
- Business Response to the Coronavirus Pandemic (2021)
- A Conversation About COVID-19 with Statistical Epidemiologists (2020)
- Highlights from the National Academies of Sciences, Engineering, and Medicine's Roundtable on Data Science Postsecondary Education (2020)
- The Statistics of Human Trafficking and Modern Slavery (2020)
- Statistics at a Crossroads: Who Is for the Challenge? (2019)
- Addressing Sexual Misconduct in the Statistics Community (2018)
- Statistical Issues in Application of Machine Learning to High-Stakes Decisions (2018)
- National Governments, Coerced Narratives, Creative Language, and Alternative Fact (2017)
- Hindsight Is 20/20 and for 2020: Lessons from 2016 Elections (2017)
- Invest in What Works: First Steps Toward Establishing Evidence-Based Policymaking Clearinghouse (2016)

Visit the online programs on the JSM website (*www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx*) to view the details of these sessions.

Submitting a Proposal

Submit late-breaking session proposals to the JSM 2022 program chair, Ming-Hui Chen, at *ming-hui.chen@uconn.edu*, with a copy to the ASA Meetings Department at *meetings@amstat.org* from February 6 through April 15. The proposal should include the following information:

- The session description, including title, summary of statistical and scientific content, explanation of its timeliness, significance, and comments about its intended target audience
- The format of the session (e.g., a chair and four panelists; a chair, three speakers, and discussant; or a chair, two speakers, and two discussants)
- The names, affiliations, and contact information for the session organizer, chair, and all participants (speakers, panelists, and discussants, if appropriate)
- A title for each presentation, if appropriate to the format
- Links to relevant technical or news reports, if appropriate

Organizers must ensure presenters agree to participate before submitting a proposal. For practical reasons, late-breaking sessions do not count against the JSM "one main presentation" rule. ■

Beyond Big Data: Supporting Students and Early-Career Professionals

SDSS

Claire Bowen, SDSS 2022 Program Chair

A wave of déjà vu hit me when I read Dave Hunter's *Amstat News* article, "SDSS: Data Science and Statistics on the Pittsburgh Waterfront." As the 2020 SDSS program chair, he described how the conference would expand the career service and include a corporate-student meetup event, speed mentoring, and lunch/dinner conversations at the convention center and downtown Pittsburgh.

With the pandemic, we know these events did not happen. However, reading Dave's article two years later, I find myself optimistic about an in-person conference in Pittsburgh with similar activities. Registration opens online February 15, and the lightning abstract submission deadline is March 10.

As I reflect on the past two years, I know many of us were grateful we could work from home, but we know students and early-career professionals missed out on developing their professional networks. While brainstorming ideas for what to do this year, the committee unanimously agreed to focus on students and early-career professionals.

To give everyone a chance to reconnect and encourage new connections, we plan to showcase student work with a student poster session as part of our opening mixer Tuesday evening, June 7. The event will provide a welcoming environment for students to network.

On the second day, we will host a career plenary panel featuring individuals from government, industry, and government. Panelists are the following:

- Rebecca Doerge, Glen de Vries Dean, Mellon College of Science, Carnegie Mellon University
- Leonard Lucas, adviser scientist, Naval Nuclear Propulsion Program
- Chris Volinsky, assistant vice president for data science and AI research, AT&T

The panel members will start by answering a few introductory questions for 15–20 minutes before splitting into three focus groups based on their sector. We will then ask mid- and late-career SDSS attendees to participate and help answer questions.

Get Ready for SDSS

Read Dave Hunter's *Amstat News* article, "SDSS: Data Science and Statistics on the Pittsburgh Waterfront."
magazine.amstat.org/blog/2020/02/01/sdss_pittsburgh

Register for SDSS.
ww2.amstat.org/meetings/sdss/2022/registration.cfm

Submit a lightning abstract.
ww2.amstat.org/meetings/sdss/2022/submitanabstract.cfm

Make travel arrangements.
ww2.amstat.org/meetings/sdss/2022/travel.cfm

We will also have a speed mentoring session for students and early-career professionals that allows them to quickly meet several attendees. This event will be paired with informal lunch meetups, in which students and early-career professionals sign up to have lunch with a particular mentor.

Additionally, we reached out to sponsors to support student travel awards. We hope to have several students attend 2022 SDSS and expand their professional network.

Of course, these events will only be successful if we have additional volunteers from the 2022 SDSS community. If you plan to attend 2022 SDSS as a mid- to late-career professional and these activities interest you, participate by filling out the form at *bit.ly/3AdavqC*.

People who know me know I am a wannabe foodie. This is why I'm so excited the Westin Pittsburgh hotel is walking distance from the famous Strip District—a 'foodie heaven.' I promise to find good food after each day's exceptional talks and events, so make your travel plans now! ■

ASA Fellow **James O'Malley** was recently appointed to the Peggy Y. Thomson Professorship in the Evaluative Clinical Sciences. O'Malley is a professor in The Dartmouth Institute for Health Policy & Clinical Practice (TDI) and department of biomedical data science in the Dartmouth Geisel School of Medicine.
The first statistician to be the Peggy Y. Thomson professor, O'Malley will use the award to advance cutting-edge research at the intersection of statistics and health services research at Dartmouth. O'Malley's statistical research work includes social network analysis, hierarchical modeling, causal inference, and Bayesian analysis with problems of interest often being motivated by compelling and complex issues in health services and health policy. He holds a PhD and bachelor's degree with honors in statistics from the University of Canterbury in New Zealand and a master's degree in applied statistics from Purdue University. Before coming to Dartmouth in 2013, O'Malley was a faculty member in the department of health care policy at Harvard Medical School. The Peggy Y. Thomson Professorship was established in 1993 by Andrew Thomson Jr. and friends in honor of his wife. ■

Ron Fricker, interim dean of the college of science and professor of statistics at Virginia Tech, has been named vice provost for faculty affairs. Fricker has been at Virginia Tech for more than six years, during which time he served as head of the department of statistics before moving into an administrative role as senior associate dean in the college of science and, most recently, interim dean of the college. He has represented the college in Virginia Tech's strategic planning effort and served as co-lead in developing the college of science's strategic plan.

Prior to arriving at Virginia Tech in 2015, Fricker was a faculty member in the operations research department of the Naval Postgraduate School and, before that, a senior statistician at the RAND Corporation and associate director of the RAND National Security Research Division. His research focuses on performance of various statistical models for use in disease surveillance and statistical process control methodologies in general.

Fricker co-authored a book published at the outset of the COVID-19 pandemic, *Monitoring the Health of Populations by Tracking Disease Outbreaks: Saving Humanity from the Next Plague*, which led to national and international appearances in media such as *Newsweek, The Wall Street Journal,* and *Bloomberg News.*

During the pandemic, Fricker applied his disease surveillance expertise with Laura Hungerford, head of the department of population health sciences, to co-lead a multidisciplinary team of Virginia Tech faculty, students, and analysts. For the past 18 months, the team has been building models to help the university understand how COVID-19 could affect the campus.

Fricker holds a PhD and a master's degree in statistics from Yale University, a master's degree in operations research from The George Washington University, and a bachelor's degree from the United States Naval Academy. Upon graduation from the Naval Academy, he served as a surface warfare officer in the United States Navy. Fricker is a fellow of both the American Statistical Association and American Association for the Advancement of Science. Most recently, he became a member of the National Academies' Board on Mathematical Sciences and Analytics. ■

Three Win Student Travel Awards to Conference on Statistical Practice

The following student winners will receive registration and travel support to attend the Conference on Statistical Practice:

John J. Bartko Scholarship Award:

Steven T. Moen
University of Wisconsin

Moen is a PhD student of statistics at the University of Wisconsin and was a master's student from The University of Chicago. He decided to study economics in college but especially the models and systems used in the field, which led him to statistics. His focus is on financial statistics and studying the theoretical aspects of time-dependent data.

Currently, Moen is collaborating with Russell Green, a senior economist at the International Monetary Fund, on a paper about the market microstructure of India's sovereign bond market, which could help prevent another currency crisis.

Moen hopes to use his knowledge to pursue a career in which he can continue striving toward solving practical challenges, which he believes can be accomplished in both industrial and academic settings.

Lester R. Curtin Award:

Ransmond Berchie
University of Utah

Berchie is an aspiring biostatistician, pursuing a PhD in population health sciences with an emphasis in biostatistics at the University of Utah. Over the past year, he has collaborated with a variety of highly trained professionals on innovative projects, including leading analyses in the treatment and prevention of cardiovascular disease.

Berchie is the lead statistician on a paper titled, "The Association of Genetic West African Ancestry with Incident Cardiovascular Disease Among African Americans." Upon returning from the Conference on Statistical Practice, he plans to organize a seminar to share what he has learned with his peers and mentors.

Lingzi Lu Memorial Award:

Shan Wu
University of Pittsburgh

Wu is a second-year master's student in biostatistics at the University of Pittsburgh. Her research work is on how to deal with the pandemic-related missing data in clinical trials.

Wu hopes to broaden her biostatistics perspective and network by visiting conferences in the field and meet and connect with experts. Her goal is to contribute to the betterment of humanity's health care. ■

Meet the ASA's 2022 Incoming Editors

Journal of the American Statistical Association (JASA) **Applications and Case Studies and Coordinating Editor:**
Michael Stein, Rutgers University

Michael Stein is distinguished professor in the department of statistics at Rutgers University, which he joined in 2019 after spending many years on the faculty at The University of Chicago. His research interests include spatial statistics, spatio-temporal statistics, extremes, and statistical problems in the physical sciences, especially climatology.

Journal of Business & Economic Statistics (JBES) **Co-Editors:**
Ivan Canay, Northwestern University, and Atsushi Inoue, Vanderbilt University

Ivan Canay is the HSBC Research Professor of Economics at Northwestern University. He earned his PhD in economics from the University of Wisconsin - Madison, and his research interests lie broadly in econometric theory and its applications. Part of his research has been about inference in partially identified models, inference with approximate randomization tests, experiments involving covariate-adaptive randomization, and inference with a small number of clustered data.

Atsushi Inoue is Cornelius Vanderbilt Chair and Professor of Economics at Vanderbilt University. He earned his PhD in economics from the University of Pennsylvania. His main research interests lie in time series econometrics. Specifically, he has been interested in issues of identification and inference in macroeconomic models.

Journal of Computational and Graphical Statistics (JCGS) **Co-Editors:**
Galin Jones, University of Minnesota, and Faming Liang, Purdue University

Faming Liang is distinguished professor of statistics at Purdue University with research interests ranging from Markov chain Monte Carlo to machine learning to bioinformatics. He has been an ASA Fellow, an Institute of Mathematical Statistics fellow, and an elected member of the International Statistical Institute. He is also a co-winner of the 2017 Youden Prize.

Journal of Statistics and Data Science Education (JSDSE):
Nicholas Horton, Amherst College

Nicholas Horton is Beitzel Professor of Technology and Society (statistics and data science) at Amherst College. He co-chairs the National Academies Committee on Applied and Theoretical Statistics and has been involved in a number of data science initiatives. Horton previously served as an associate editor, section editor, and guest editor for the journal.

Statistics and Public Policy (SPP):
Aleksandra Slavković, Penn State University

Aleksandra (Seša) Slavković is a professor of statistics and associate dean for graduate education in the Eberly College of Science at Penn State. Her primary research focuses on statistical methodology for data privacy in the context of small- and large-scale surveys and health, genomic, and network data, including differential privacy and broad data access that offers guarantees of accurate statistical inference needed to support reliable science and policy. She is a fellow of the ASA, Institute of Mathematical Statistics, and International Statistical Institute; serves as an associate editor for the *Annals of Applied Statistics* and *Journal of Privacy and Confidentiality*; and is the 2022 chair of the ASA Social Statistics Section. She earned her PhD in statistics from Carnegie Mellon University.

Journal of Survey Statistics and Methodology (JSSAM):
Katherine J. Thompson, US Census Bureau

Katherine J. Thompson is a survey statistician with more than 30 years of professional experience. She is the senior mathematical statistician in the Associate Directorate for Economic Programs of the Census Bureau. Her practical and theoretical experience covers all areas of sample survey design, including sample selection, estimation, variance estimation, analysis, statistical data editing, imputation, and quality control. She has published research in and refereed for many journals and currently serves as associate editor of the *Journal of Official Statistics*. She was elected an ASA Fellow in 2017.

Journal of Nonparametric Statistics (JNPS):
Wenbin Lu, North Carolina State University

Wenbin Lu is professor of statistics at North Carolina State University. His research mainly focuses on semiparametric/nonparametric methods and inference, personalized medicine, causal inference, machine learning, and high-dimensional data analysis. He is an associate editor

for *Biostatistics, Biometrics,* and *Statistica Sinica* and a fellow of the American Statistical Association.

Journal of Agricultural, Biological, and Environmental Statistics (JABES):
Jorge Mateu, Universitat Jaume I

Jorge Mateu earned a bachelor's degree in 1992 from the University of Valencia (Spain) in mathematics and statistics and completed his PhD in statistics in 1998 from the same university under the supervision of Peter Diggle and Francisco Montes. He is a full professor of statistics in the department of mathematics at University Jaume I of Castellon (Spain). Mateu has expertise in stochastic processes in their wide sense, with a particular focus on spatial and spatio-temporal point processes, but also on geostatistics and areal spatial data. His research lies at the intersection of statistics, computational sciences, and natural and social sciences with a wide focus on data science. Large projects in crime data analysis and public health, where a combination of statistical methods and machine learning methods are at the core of the approach, are currently taking most of the time of his research group.

Mateu became an elected member of the International Statistical Institute in 2004 and fellow of the Royal Statistical Society in 2016.

He has published more than 250 papers in peer-reviewed international journals and organized several international conferences with a focus on modeling space-time processes. He sits on the editorial boards of *JABES, Spatial Statistics,* and *Environmetrics*. ■

Sacks Award Winners to Speak During JSM Invited Session

From left: Marc Suchard, Francesca Dominici, and Jeremy Taylor

The National Institute of Statistical Sciences (NISS) Jerome Sacks Award for Outstanding Cross-Disciplinary Research recognizes sustained, high-quality, cross-disciplinary research involving the statistical and data sciences. The following past award recipients represent the cutting edge in statistical research and will speak during an invited session hosted by NISS at JSM:

- **Marc Suchard**, professor of computational medicine, biostatistics, and human genetics at the University of California, Los Angeles (2021)
- **Francesca Dominici**, Clarence James Gamble Professor of Biostatistics, Population, and Data Science at the Harvard T.H. Chan School of Public Health and co-director of the data science initiative at Harvard University (2020)
- **Jeremy Taylor**, the Pharmacia Research Professor of Biostatistics, Computational Medicine, and Bioinformatics at the University of Michigan (2019)

This session will focus on new developments and challenges in the cross-disciplinary research on health data science. Today, statisticians and biostatisticians actively collaborate with biomedical scientists, computer scientists, and mathematicians to work at the frontier of biological, medical, and public health research. Transdisciplinary collaboration not only develops the foundation of health data science but accelerates the pace of scientific discovery and innovation.

James Rosenberger, NISS director, will serve as the discussant.

2022 Award Nominations

Nominations are being sought for the 2022 Sacks Award.

To nominate an individual, submit as one PDF document the following information to *officeadmin@niss.org* by April 1:

- Nomination letter (maximum two pages)
- Supporting letters from two individuals (other than nominator)
- The nominee's most current CV

An award of $1,000 will be presented during the National Institute of Statistical Sciences reception at the Joint Statistical Meetings (JSM) in Washington, DC, August 6–11.

Send questions or comments to *officeadmin@niss.org*.

Obituary

Kjell A. Doksum

Submitted by Vijay Nair

Kjell Doksum, an ASA Fellow, died November 20, 2021, at the age of 81. He was professor emeritus of statistics at the University of California, Berkeley, and senior scientist in the statistics department at the University of Wisconsin, Madison.

Kjell was born in Sandefjord, Norway, and grew up in Oslo. His parents were Filip Doksum and Elise Olsen, and he had two brothers. He was married to Joan Fujimura, a distinguished scholar in the sociology of science, and had three daughters: Teresa; Kathryn; and Margrete.

Kjell's lifelong passion was soccer (or football). He grew up near Bislett Stadium and started playing in the streets of Oslo. Alas, his skills on the cobblestones did not translate to the pitch and his hopes of becoming a professional player were dashed. Nevertheless, he remained an avid soccer fan and played recreational soccer well into his '60s. Generations of students, faculty, and visitors at Berkeley, Madison, and elsewhere will fondly recall the practices, games, and parties he organized. It was during one of the soccer parties that I asked him if I could work with him on my dissertation. Not being a man of many words, Kjell just said, "Sure." He became not only my adviser, but lifelong mentor and close friend.

Another potential career that didn't work out was fishing. After high school, Kjell moved to San Diego to join his aunt and uncle. Many of his relatives were fisherman, so he tried it out for two weeks. After getting seasick from the huge waves during a storm, he decided that going to San Diego State College was a smarter and safer option. The fishing industry's loss was a huge gain for statistics.

Kjell earned his master's degree in statistics from San Diego State College in 1962, where he worked with Chuck Bell, one of the few African American statisticians at the time. He then moved to the University of California, Berkeley, where he completed his PhD in 1965 under the supervision of Erich Lehmann. After a year as a postdoc in Paris, he joined the Berkeley statistics department, where he spent most of his academic career. He took an early retirement in 2002 and moved to the University of Wisconsin, Madison, with his wife, Joan, who was recruited by the department of sociology. Kjell retired from Wisconsin in 2010 but remained there as a senior scientist. He held visiting positions at the L'Universite de Paris, University of Oslo, the Norwegian Institute of Technology in Trondheim, Harvard University, Columbia University, Bank of Japan, Hitotsubashi University in Tokyo, and Stanford.

Kjell made pioneering contributions to statistical theory and methodology, covering a wide range of areas: randomization methods; nonparametric and rank-based inference; survival and reliability analysis; semiparametric techniques; transformation models; probability measures; and Bayesian inference. In early collaboration with Bell, he developed a randomization procedure and showed the resulting Gaussian randomized tests were asymptotically more powerful in nonnormal situations than the classical ones. He returned to this topic later, when he proposed a Monte Carlo approach for partial likelihood inference for semiparametric models.

In the early 1970s, Kjell introduced the shift function as a nonparametric functional measure of difference between distribution functions and, in a series of subsequent papers, developed inference procedures. In fact, he was still working with a student on extending this approach to regression settings at the time of his death.

In one of his most cited papers, Kjell proposed the well-known "neutral-to-the-right" processes and developed their properties. These processes are useful in nonparametric Bayesian inference. Kjell's joint work with Peter Bickel provided deep insights into statistical properties of procedures based on transformed data. In joint work with Steinar Bjerve and others, he introduced the concept of local correlation in nonparametric regression framework. He proposed, jointly with Arnljot Hoyland, a new class of degradation models for reliability and life testing. He and his

co-authors also made many important contributions to survival and censored data analysis. The Festschrift volume organized for his 65th birthday, *Advances in Statistical Modeling and Inference: Essays in Honor of Kjell A. Doksum* (2006), edited by V. Nair, covered contemporary results on all these research areas.

Many graduate students at Berkeley and elsewhere learned their statistics theory and methods from Kjell's book, co-authored with Peter Bickel, *Mathematical Statistics: Basic Concepts and Selected Topics*. I fondly remember the early edition (called the 'Red Book' by students), all the more because of the many errors we had to work through. It made our learning more robust!

Kjell supervised 24 PhD students and several undergraduates. Quite a few returned to their home countries to pursue successful careers. He served on the editorial boards of *JASA*, *Scandinavian Journal of Statistics, Life Data Analysis*, and *Sankhya*. He was executive secretary of the Institute of Mathematical Statistics (IMS) and played a key role in the founding of the IMS journal *Statistical Science.* He was recognized for his contributions by being elected a fellow of ASA and IMS, an elected member of the International Statistical Institute, and a foreign member of the Royal Norwegian Society of Sciences and Letters.

Kjell was a kind, gentle, and soft-spoken person. He always had a sweet smile on his face, a great sense of humor, and time for everyone. He rarely talked about himself, except to Joan who used her ethnographic interviewing skills to get him to talk about his childhood and views on all things political. Kjell was a fierce advocate for social justice. He had developed an integrity and moral strength that carried him through many adversities, beginning with his mother's early death and the Nazi occupation of Oslo during his early childhood.

Obituary

Leland Wilkinson

Leland Wilkinson, H2O.ai chief scientist and longtime ASA member, passed away December 10, 2021, following a stroke.

During the late 1970s and early 1980s, Leland wrote SYSTAT, the first comprehensive statistical software package designed expressly for microcomputers. It represented an end-run around the punch cards, queues, and mainframes required for statistical analysis at that time. The program was the first of its kind to include comprehensive graphics driven by a command structure of universally applicable options, foreshadowing the graphical structure Leland would more fully develop and articulate during the 1990s. SYSTAT was also the first software implementation of the now widely used heatmap display.

Leland founded SYSTAT, a company of the same name headquartered in Evanston, Illinois, and sold it to SPSS in 1995. He went on to build a team of graphics programmers there who developed the nViZn platform that produces the visualizations in SPSS, Clementine, and other analytics services.

Leland wrote the seminal book on statistical graphics, his magnum opus *The Grammar of Graphics,* in 1999. *The Grammar of Graphics* provided a new way of creating and describing data visualizations, a language—or grammar—for specifying visual elements on a plot, which was a completely novel idea that has fundamentally shaped modern data visualization. The book served as the foundation for the R package ggplot2, the Python Bokeh package, and the R package ggbio. It also helped shape the Polaris project at Stanford University.

Leland earned a bachelor's degree from Harvard, a bachelor of sacred theology degree from Harvard Divinity School, and a doctorate from Yale. He was an adjunct professor of computer science at the University of Illinois at Chicago, a fellow of the American Statistical Association, an elected member of the International Statistical Institute, and a fellow of the American Association for the Advancement of Science. He won the best speaker award at the National Computer Graphics Association and the Youden prize for best expository paper in the statistics journal *Technometrics*. He also served on the Committee on Applied and Theoretical Statistics of the National Research Council, was vice chair of the National Institute of Statistical Sciences Board, and served on the Board of Trustees of the Institute for Pure and Applied Mathematics at The University of California, Los Angeles.

To learn more about Leland's life and work, visit *en.wikipedia.org/wiki/Leland_Wilkinson* and *bit.ly/3rmm6iM.*

Pride Scholarship

Nominations are being accepted for the ASA Pride Scholarship until March 31. To be eligible, candidates must meet the following conditions:

- Be enrolled in a statistics or data science graduate program or have earned a statistics or data science degree within five years of the award date
- Identify as LGBTQ+ or an ally

The ASA Pride Scholarship was established to raise awareness for and support the success of LGBTQ+ statisticians and data scientists and allies. The scholarship celebrates their diverse backgrounds and highlights the invaluable skills and perspectives these individuals bring to the ASA, statistics, and data science.

The ASA will appoint an award selection committee with input from the Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group and the ASA LGBTQ+ Advocacy Committee.

Visit *bit.ly/3Ifd3ap* for details. ■

Bryant Scholarship

Applications are being accepted for the Edward C. Bryant Scholarship for an Outstanding Graduate Student in Survey Statistics until March 1. One scholarship recipient is selected annually and receives a certificate and cash prize of $2,500.

Selection of the scholarship recipient is made by the ASA Bryant Scholarship Award Committee based on the following criteria:

- Potential to contribute to survey statistics
- Applied experience in survey statistics
- Performance in graduate school

Westat established the Edward C. Bryant Scholarship Trust Fund in 1995 to honor its cofounder and chair emeritus and to help support a student's graduate education. Under Bryant's leadership, Westat—an employee-owned statistical firm established in 1961—has grown into one of the world's leading statistical research corporations serving federal, state, and local governments, as well as businesses and foundations.

See *bit.ly/3nAQjty* for details. ■

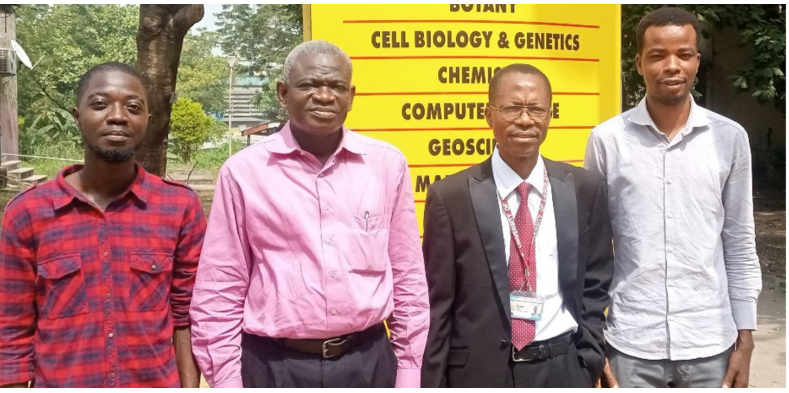
Deadlines and Contact Information for Select ASA National Awards, Special Lectureships, and COPSS Awards

AWARD	DEADLINE	QUESTIONS & NOMINATIONS
Edward C. Bryant Scholarship Trust Fund	March 1	*awards@amstat.org*
Excellence in Statistical Reporting Award	March 1	*awards@amstat.org*
ASA Fellows	March 1	*awards@amstat.org*
ASA Mentoring Award	March 1	*awards@amstat.org*
Outstanding Statistical Application Award	March 1	*awards@amstat.org*
Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Award	March 1	*awards@amstat.org*
Annie T. Randall Innovator Award	March 15	Sherri Rose (*sherrirose@stanford.edu*)
Biopharmaceutical Section Scholarship Award	March 15	Biopharmaceutical Community Website(*community.amstat.org/biop/awards/scholarship*)
Founders Award	March 15	*awards@amstat.org*
ASA Pride Scholarship	March 31	Donna LaLonde (*donnal@amstat.org*)
Government Statistics Section Wray Jackson Smith Scholarship	April 1	David Banks (*banks@stat.duke.edu*)
Causality in Statistics Education Award	April 5	*awards@amstat.org*
Links Lecture Award	July 1	*awards@amstat.org*
Health Policy Statistics Section Achievement Awards	September 15	*www.asahealthpolicy.org/for-students*
Lester R. Curtin Award	October 15	*awards@amstat.org*
Deming Lecturer Award	October 15	*awards@amstat.org*
Lingzi Lu Memorial Award	October 15	*awards@amstat.org*

Nigeria Hosts First ASA Student Chapter in Africa

Carolina Franco and Obafemi Keshinro

Last December, the first ASA student chapter to be created in Africa was founded in Nigeria. The Nigeria ASA Student Chapter is headquartered at the University of Lagos but includes students from other universities throughout the country. It will provide its members with many professional growth opportunities and bring new perspectives to the ASA community.



From left: Abass Joel, publicity secretary; M. Adamu, faculty adviser; A.O. Keshinro, faculty adviser; and Idowu Osubu, chapter president

The idea for creating the Nigeria Student Chapter emerged from a meeting of the ASA Committee on International Relations in Statistics (CIRS) in March of 2020, during which committee members discussed encouraging/assisting with the creation of international student chapters.

Among other activities, CIRS administers the Educational Ambassador (EA) program, where scholars from around the globe are selected to attend JSM short courses and later teach what they learned in their home countries. With the pandemic having put the EA program on hold, helping with the initiation of student chapters seemed like a great way to continue fulfilling the committee's goal of bringing educational opportunities to other countries. CIRS member Obafemi Keshinro volunteered to lead the creation of a student chapter in his home country of Nigeria. The committee encouraged the idea and began collecting a list of ASA resources that would be valuable to international student chapters.

A.O. Keshinro joined forces with the 2016 ASA Educational Ambassador from Nigeria, Adedayo Adepoju of the statistics department at the University of Ibadan. A local planning team was created and met several times virtually and in person. The team also included Mumuni Adamu, head of the department of mathematics at the University of Lagos (UNILAG); Sanya Olubusoye, coordinator of the Laboratory for Interdisciplinary Statistical Analysis (LISA) at the University of Ibadan; and Nnamdi Mojekwu, head of the actuarial science and insurance department at UNILAG.

Efforts to launch the student chapter began in October 2021 with the circulation of a membership registration form via Google across several universities in Nigeria. The call for registration had an overwhelmingly positive response, with 515 students registering from 10 universities.

The first student chapter president, Idowu Osubu, was elected from the University of Lagos. "There will be opportunities to interact with great statisticians from around the globe and gain from their wealth of experience," said Osubu. The first faculty adviser chosen was Adamu, who expressed his desire to build the student chapter into an agent of positive change for society and become a point of teaching and learning of statistics.

The chapter was officially inaugurated on December 10, 2021, with a webinar titled, "Data Science: Big Data Analytics and Machine learning." The webinar began with an introduction by Keshinro, and then featured a talk by former ASA president Wendy Martinez welcoming the students to the ASA. It was followed by a seminar by CIRS vice chair, Nathaniel Newlands. CIRS chair Carolina Franco then gave a presentation about ASA resources available to student chapters and joined the other speakers in welcoming students to the ASA. Closing remarks were delivered by Adamu.

Active participants at the webinar ranged between 75 to 80 people, and the seminar was deemed by the students to be insightful. Among the participants was the vice chancellor of Mountain Top University, a renowned private university in Nigeria. Overall, the webinar was a success and got the student chapter off to a great start.

When asked about his thoughts for the student chapter, Keshinro said, "The ASA Nigeria Student Chapter should become a platform for students of statistics, data science, and other data enthusiasts in Nigeria to interact academically with others in the field from universities where ASA has its network and to launch outreach programs capable of positively impacting society and industry with the practice of the profession."

The leadership of CIRS hopes the success of the Nigeria Student Chapter will inspire others to follow, so other students from around the world can also join the ASA community.

To learn more about CIRS or starting student chapters, or to become a friend of the committee, visit *bit.ly/3tDu1LE* or email Franco at *franco-carolina@norc.org.* ■

Statistical Consulting

The Section on Statistical Consulting, in conjunction with the journal *Stat,* is soliciting articles for a special issue, "Statistical Consulting and Collaboration," with coeditors Robyn L. Ball, H. Dean Johnson, Lee-Ann Hayek, Xiaoyue Niu, Joseph Rigdon, and Hao Helen Zhang.

A subcommittee of the section has worked for the last three years to establish a forum for practicing statisticians at all levels to discuss various aspects of the practice. This special issue is an opportunity for consultants and collaborators to showcase their work.

This collection will encompass two broad categories of research articles. Section 1, "Innovative Application of Statistical Techniques," will focus on impactful and innovative statistical approaches, especially as they relate to challenges encountered with data or scientific questions that require a nuanced approach. Section 2, "Collaborative Skill Development," will focus on essential techniques and skills for collaborations, including case studies, strategies for effective communication, strategies for building successful collaborative relationships, and approaches to mentoring and/or training fellow statisticians and data scientists. For details, see the formatting requirements for these submission types at *bit.ly/3AgX09d*.

The goal of the special issue is to promote an exchange of ideas relevant to the practice by providing a written forum for consulting and collaborative statisticians to influence best practices in areas key to statistics. As many consulting statisticians have considerable knowledge, skills, and experiences associated with the practice of statistics, this special issue of *Stat* is a venue to share this information.

Stat is known for its high-quality articles and rapid review process, with accepted papers published within 30 days of submission. Submissions are open until June 1 for original works and should be made via ScholarOne at *https://mc.manuscriptcentral.com/stat.* ■

Quality and Productivity

The 38th ASA Q&P Section's Quality and Productivity Research Conference will be hosted by San Francisco State University June 14–16, 2022. The theme of this year's conference is "Data, Statistics, and Responsibility." The goal of the conference is to stimulate interdisciplinary research among statisticians, scientists, and engineers in quality and productivity.

The conference will honor Bin Yu, Chancellor's Distinguished Professor in the departments of statistics and electrical engineering and computer sciences and the center for computational biology at the University of California, Berkeley.

Conference registration begins this month. For an additional registration fee, a short course, "Empowering the Statistician with Spark, Machine Learning, and Deep Learning," by Hui Lin from Shopify and Ming Li from Amazon will be offered on June 13.

An important objective of the QPRC is to encourage student participation. Scholarships for participation in the conference include the Mary G. and Joseph Natrella scholarships and QPRC student scholarships.

For up-to-date information about the conference program, short course, registration, scholarships, and hotel information, visit the conference website at *https://qprc2022.com.* The hybrid format of the conference will accommodate both in-person and virtual participation.

To submit a contributed paper for the conference, provide the title, authors, and an abstract to Michael Ruddy at *mruddy@usfca.edu*.

Questions about the conference can be emailed to Alexandra Piryatisnka at *alpiryat@sfsu.edu* or Angela Schoergendorfer at *angelasch@google.com.* ■

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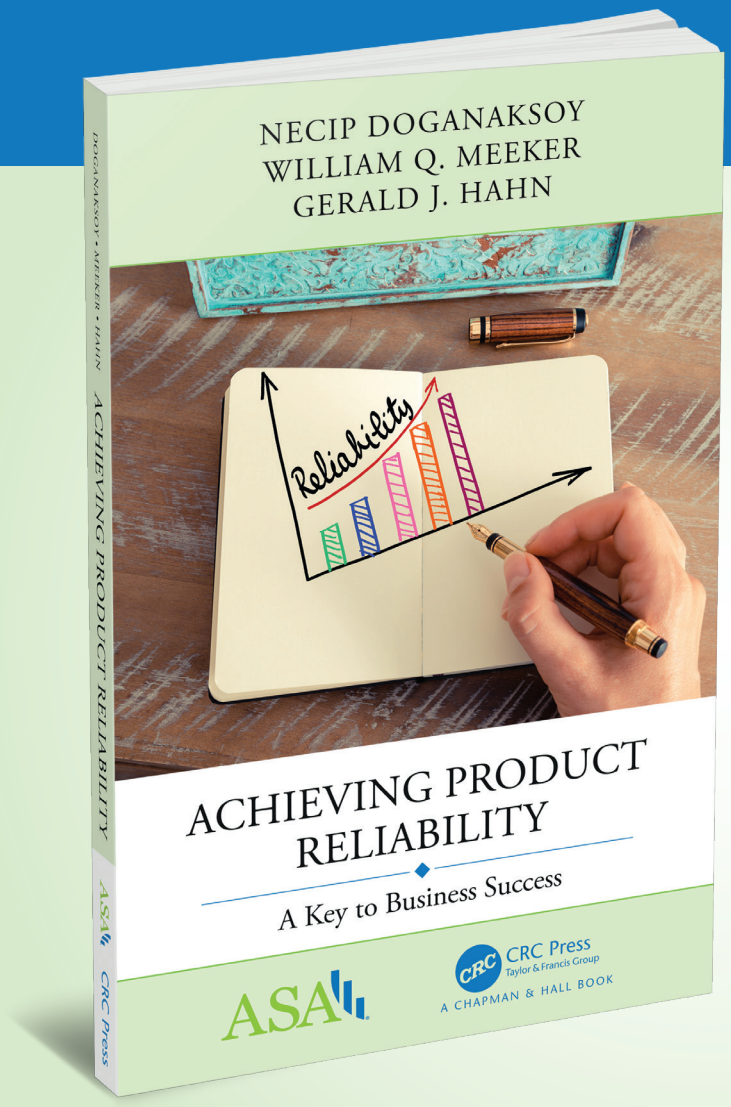
Necip Doganaksoy, William Q. Meeker and Gerald J. Hahn



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– Carolyn Morgan, MECK, Limited LLC

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Random Walks: A Life Searching for Significance

Toño Dávalos
Dr. Imbroglio or: How I Learned to Stop Worrying and Love Information Entropy

Grover B Proctor Jr
My Standard Deviations and Regressions: A Life of Variance

David Young
A Study on the Lack of Correlation Between Known Grant Deadlines and PI Planning Capabilities

Next month, we'll ask: "As a statistician, what is your favorite app for doing your work?"

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Online Registration and Housing Open: February 15, 2022

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