January 2023 • Issue #547

AMSTATNEWS

The Membership Magazine of the American Statistical Association • *http://magazine.amstat.org*

ASA FORENSIC SCIENCE COMMITTEE CELEBRATES

ALSO:

November Board Meeting Highlights

Meet Alex Piquero, Head of the Bureau of Justice Statistics

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AMSTATNEWS

JANUARY 2023 • ISSUE #547

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

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

features

columns

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

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

Teachers: Start Your Students Thinking About Data

Introduce your K–12 students to statistics through the data visualization poster and statistics project competitions, directed by the ASA/NCTM Joint Committee on Curriculum in Statistics and Probability. There is no cost to enter either competition.

- **Data visualization posters** (grades K–12) are due April 1. Visit *https://bit.ly/34VmGNg*.
- **Statistics projects** (grades 7–12) are due June 1. Visit *https://bit.ly/3surRMv*.

Data Science Conference

The ASA is a sponsor of the Data Science Conference hosted by the **Data Institute at the University of San Francisco** at its campus in the San Francisco Financial District. The conference brings together **academics, practitioners, and students** from an array of organizations to learn about developments in the field and applications in areas such as the environment, data ethics, marketing, and health care.

Originally held in 2017 and again in 2019, the conference was canceled in 2021 due to the COVID-19 pandemic. This year, it will take place March 12–14. Visit the conference website for details: *https://dsco.usfdatainstitute.org*.

CORRECTION

The volume number for the August issue of *Amstat News* should be 542 and the October issue should be 544. We apologize for the error.

departments

member news

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Mission ~~Im~~possible

The time surrounding the end of one year and the beginning of another is often used to reflect on the year gone by and plan for the year ahead. In that spirit, I spent the latter part of 2022 admiring our activities, many of which were highlighted by Katherine Ensor in her December President's Corner. My thanks to Kathy for her leadership, and thanks to all of you for your continued commitment to our professional community.

In this issue of *Amstat News*, you will read a retrospective article about the International Day for Women in Statistics and Data Science and meet Alex Piquero, who was appointed by President Joe Biden to serve as the director of the Bureau of Justice Statistics. We also celebrate the 10-year anniversary of the Advisory Committee on Forensic Science and, in the JEDI Corner, we learn how statisticians and data scientists are making graphics more accessible. We have much to be proud of and, working together, I am confident we will build on our foundation and move the ASA forward.

Throughout last year, I met many in our community who asked, "What will be the focus in 2023?" I often answered with a question, "Do you have any ideas or thoughts as it pertains to ASA activities?" I appreciated all who shared ideas. As I thought about them, I also thought about what motivates me as a professional and active ASA member. I have been employed by the US Food and Drug Administration since beginning my career as a statistician, and the reason for the longevity is simply my belief in the FDA's mission. Similarly, I believe in the mission of the ASA, which is promoting the practice and profession of statistics. Thus, 2023 will be a mission-driven year informed by ideas shared by our community.

Dionne Price

Promoting the Profession

As part of the ASA Leadership Institute, we have an opportunity to establish Stats Forward, a professional development program for early-career statisticians and data scientists. Working with our phenomenal chapters and sections, approximately 15–18 early-career professionals across

academia, business/industry, and government will be selected to participate in this year-long program. Stats Forward will begin at JSM and conclude at JSM the following year. Throughout the year, the cohort will participate in workshops and benefit from mentoring provided by the ASA Leadership Institute. More to come as we work to build this program.

Promoting the Practice

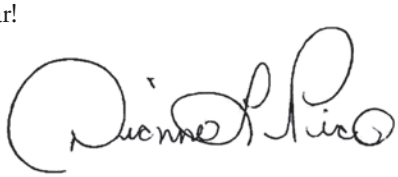
We have more than 16,000 members from 90+ countries who work across various sectors. The research and daily work of statisticians and data scientists are instrumental in every aspect of society. However, many external to our community are unaware of the value we bring to scientific discoveries and decisions. Moreover, within our community, everyone may not be as familiar with exciting opportunities within the ASA for collaboration, leadership, and career development.

We can increase awareness by further enhancing and refining our communication outlets. We will engage sections and chapters and review our communication outlets to ensure we are actively and effectively communicating our accomplishments and value proposition. As part of our communication strategy, I envision an ASA with a significant presence on professional social media platforms, as recommended by several members.

Promoting the Practice and Profession of Statistics

As a community, we are aware of the vast opportunities that await statistics and data science students. We have activities and resources for K–12 students, as well as undergraduate and graduate students. As we continue to promote statistics and data science, it will be beneficial to ensure students attending two-year colleges have a seamless transition to a statistics or data science program at a four-year college or university. We plan to convene state-level academic leaders with a goal of influencing state-wide articulation agreements and establishing a mechanism for ongoing collaborations through the ASA Leadership Institute and in collaboration with the Education Council, Caucus of Academic Representatives, and Caucus of Industry Representatives.

Let me end with a personal story. I fell in love with biostatistics during a summer internship as an undergraduate. I was an applied mathematics major searching for a direction, and an internship at the National Institutes of Health ignited my passion for statistics. The rest as we say, "is history." My passion for the "practice and profession of statistics" has grown stronger because I am fortunate to work with a talented group of statisticians and other professionals and able to serve our community. I am excited about working with the ASA Board of Directors and you all to continue to advance our mission-driven goals. This year will be a mission possible year!



Highlights of the November 2022 ASA Board of Directors Meeting

On Friday, November 18, ASA President Kathy Ensor gaveled to order the final 2022 meeting of the ASA Board of Directors. The board met at the ASA headquarters in Alexandria, Virginia.

Prior to opening the meeting, the board launched ASA Giving Day with a live presentation on social media. Additionally, the board participated in the inaugural IDEA Forum, a part of the ASA Leadership Institute, at the end of the Friday afternoon session. Other highlights of the board meeting follow.

Action

The board decided JSM 2023 in Toronto will be an in-person meeting.

Reports and Discussions

- Teri Utlaut, chair, and Erin Wiley, member of the Committee on Membership Retention and Recruitment, reported on focus group meetings conducted by the committee and provided the board with key takeaways from members involved in these focus groups.
- ASA Director of Science Policy Steve Pierson provided his regular report on the ASA's advocacy efforts. Pierson updated the board on the status of a data science and literacy bill and science and statistical agency budgets. He announced that the ASA received a grant from the Alfred P. Sloan Foundation to support assessing the health of the federal statistical system.
- Donna LaLonde, ASA director of strategic initiatives and outreach, announced a plan to update the *College GAISE* report. These *Guidelines for Assessment and Instruction in Statistics Education* have been valuable and are due for an update.
- Associate Executive Director and Director of Operations Steve Porzio summarized the financials through September 30. He said the ASA would end the year in the red due to lower than budgeted revenues in meetings and membership.
- ASA Treasurer Ruixiao Lu reported on the ASA's investments. She noted investments took a significant hit, reflecting the market downtown. Lu also updated the board on the activities of the Investments Committee, Budget Committee, and Audit Committee.
- ASA President Kathy Ensor provided a final update on and assessment of 2022 initiatives, including expanding the role of the ASA in data science and AI, developing the Leadership Institute, and highlighting the impact statisticians are having in many areas.
- ASA President-Elect Dionne Price outlined her planned initiatives to promote the practice and profession of statistics during 2023 with foci related to professional development, communication, and education.
- The board heard from our partners in The Nova Collective—who are assisting it in its diversity, equity, and inclusion efforts—especially with regard to the Antiracism Task Force's recommendations.
- Mark Glickman, chair of the Data Science and AI Committee, updated the board on the work of the committee since it launched this fall, including a draft of an update to the ASA Statement on the Role of Statistics in Data Science. A revised statement proposal will come to the board in the spring.
- ASA Board members Ruixiao Lu, Ji-Hyun Lee, and Alex Hanlon updated the board on plans for developing collaborations with professional societies that focus on oncology research.

2022 Board of Directors

Kathy Ensor, President

Dionne Price, President-Elect

Scarlett Bellamy, Vice President (completing the term of Dionne Price)

Matilde Sanchez-Kam, Second-Year Vice President

Nick Horton, First-Year Vice President

Ji-Hyun Lee, Third-Year Council of Chapters Representative

Alexandra Hanlon, Second-Year Council of Chapters Representative

Kendra Schmid, First-Year Council of Chapters Representative

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Kate Calder, Second-Year Council of Sections Representative

Michelle Shardell, First-Year Council of Sections Representative

Alexandra Schmidt, International Representative

Bin Nan, Publications Representative

Ruixiao Lu, Treasurer

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2023 Board of Directors

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Kate Calder, Third-Year Council of Sections Representative

Michelle Shardell, Second-Year Council of Sections Representative

Jana Asher, First-Year Council of Sections Representative

Ingrid Van Keilegom, International Representative

Bin Nan, Publications Representative

Ruixiao Lu, Treasurer

Ron Wasserstein, Executive Director and Board Secretary

- ASA Vice Presidents Matilde Sanchez-Kam and Scarlett Bellamy presented the annual reports of the Professional Issues and Visibility Council and Education Council, respectively. For each ASA committee or other entity within the councils, they reviewed the activities from the past year and future plans and brought forward any concerns these entities have.
- The board discussed plans for JSM 2023 in Toronto and for the ASA's smaller meetings.
- Brittany Segundo and Michelle Schwalbe from the National Academics Committee on Applied and Theoretical Statistics briefed the board on the committee's activities and discussed ways the ASA can engage with it.

The board will have its next meeting March 31 to April 1 at the ASA office in Alexandria, Virginia. ■

GiveASA

Back to Where It Began

Amanda Malloy, ASA Director of Development

It all started five years ago at the 2017 fall Board of Directors Meeting. Following a discussion about how to inspire more members to donate—prompted by my fundraising report earlier that day—someone suggested having an annual day of giving. To demonstrate their support, each member of the board, including incoming and outgoing members, agreed to participate in the first-ever ASA Board of Directors matching campaign. Their pledged donations added up to $30,000. No one knew what to expect, as that was the largest matching campaign we had ever had, but we ended up raising more than $50,000. And so, ASA Giving Day was born.

This year, we decided to go back to where it began and hold ASA Giving Day in conjunction with the fall board of directors meeting. We did a live kick-off that morning and other check-ins on social media throughout the day. It was a fun way to give everyone a glimpse of what was happening during the board meeting and for the board to connect with members. Seeing the donations come in real time was especially exciting, since many of the board reports and discussions had to do with ASA initiatives that donations help support.

By the end of Giving Day, 146 donors gave nearly $56,000. Congratulations to this year's Chapter Challenge and University Challenge winners:

Chapter Challenge Winners

- Region 1 – Washington Statistical Society
- Region 2 – Kansas/Western Missouri Chapter
- Region 3 – Houston Chapter

University Challenge Winners

- Rice University
- The University of North Carolina at Chapel Hill
- University of California, Irvine

To learn more about the Giving Day challenges and what donations do, visit *ww2.amstat.org/givingday.* ■

Applications for ASA Science Policy Fellowship Wanted

Influence Policymaking While Helping the Statistics and Data Science Professions

The ASA seeks applications for its fall of 2023 science policy fellowship. A one- to two-year position, the fellow will be based at the ASA headquarters in Alexandria, Virginia; however, they will spend much of their time in Washington, DC, advocating for statistics and experiencing first-hand how federal science policy is formed.

Past fellows have furthered ASA efforts across all branches of government. For example, they have helped draft amicus brief arguments for the Supreme Court on issues such as immigration and diversity in the media, written research papers informing ASA advocacy, and made recommendations to the legislature on the use of statistical evidence and funding agencies to support reproducible research. They have also led ASA communication initiatives such as the "State of the US Data Infrastructure" article series.

We will start considering applications March 1 and continue until the position is filled. Questions about this opportunity and application requirements may be directed to ASA Director of Science Policy Steve Pierson at *pierson@amstat.org.*

The fellowship was created in 2016 to elevate the profile of statistics in policymaking and advocate on behalf of the profession. Since then, ASA fellows have been Amy Nussbaum, Daniel Elchert, Jonathan Auerbach, and Ed Wu.

To apply visit *ww2.amstat.org/policy/fellowship.cfm.*

MORE ONLINE

Read about Daniel Elchert's time as an ASA science policy fellow at *bit.ly/3uJInJs.*

ASA FORENSIC SCIENCE COMMITTEE CELEBRATES 10 YEARS

Last fall marked 10 years since the ASA Board of Directors created an ad hoc committee on forensic science. The Advisory Committee on Forensic Science's creation recognized and formalized the ongoing critical work of ASA members to ensure a strong statistical perspective in the forensic science reform effort energized by the 2009 National Academy of Sciences report, *Strengthening Forensic Science in the United States: A Path Forward* (*bit.ly/3Fqs75d*).

With a charge to "advise the ASA on forensic science reform issues and to ensure that statistics and statisticians maintain a visible profile in the forensic sciences and forensic science reform," the committee and broader statistical community have been integrally involved in the broad efforts to strengthen the forensic science disciplines.

The committee asked current and former members to reflect on the progress made, contributions by the statistical community, and priorities for future work. What follows is a compilation of responses from Maria Cuellar, current committee chair and an assistant professor at the University of Pennsylvania; Danica Ommen, current committee vice chair and an assistant professor at Iowa State University; Alicia Carriquiry, distinguished professor and president's chair at Iowa State University and director of the Center for Statistics and Applications in Forensic Evidence; Karen Kafadar, commonwealth professor and former chair of statistics and co-director of the Center for Statistics and Applications in Forensic Evidence at the University of Virginia; Julia Mortera, a professor at Università Roma Tre; Chris Saunders, a professor at South Dakota State University; and Hal Stern, chancellor's professor and co-director of the Center for Statistics and Applications in Forensic Evidence at the University of California, Irvine.

STATISTICAL ADVANCES in Strengthening Forensic Science

Strengthening Forensic Science in the United States: A Path Forward explicitly identified the need for statisticians to be involved in developing the statistical foundations of forensic science techniques, leading to greater involvement of the statistics community in ongoing efforts to create standards for forensic science and forensic science research.

Statisticians are conducting research they believe is missing from the current forensic science literature, including constructing algorithms that use statistical analyses to evaluate evidence. When research is conducted in collaboration with forensic practitioners, the chances that the new methods are useful and used in real casework are much improved.

In the specific case of pattern comparison disciplines (e.g., fingerprint analysis, firearms analysis, footwear analysis), the use of statistical learning algorithms to extract information from images and quantify similarities and dissimilarities between two items has led to the development of objective data-based methods that have the potential to address some of the shortcomings of subjective approaches that rely on visual comparisons and experience.

The gradual acceptance of a likelihood ratio framework for evaluating the weight of evidence in favor of one of two propositions under consideration also represents a step forward. Even though wide adoption of likelihood ratios in the United States is still in the future, forensic scientists and legal professionals have begun to realize the importance of thinking about the chances of observing the evidence under different scenarios.

Several universities have taken the initiative to train the next generation of statisticians and scientists on how statistical concepts apply to forensic science disciplines. New courses and programs have been developed, along with research experiences that prepare students for careers in forensic science, criminal justice, or related fields.

CONTRIBUTIONS
to the Forensic Science Community

The committee has already had a significant effect on the forensic science community by focusing on two areas: providing a mechanism for communicating the role of statistics and statisticians in ongoing attempts to improve forensic science and publicizing the needs of this important science policy domain within the statistics field.

The committee has played a large role 'behind the scenes' to ensure funding for high-quality forensic statistics research is available and has advocated for the appropriate use of statistical language and methods. The committee has strived to develop meaningful relationships with many federal agencies, including the FBI, National Institute of Standards and Technology, and National Institute of Justice, as well as with local forensic laboratories. The committee has written public statements such as the ASA Position on Statistical Statements for Forensic Evidence and letters and statements to Congress and the Department of Justice. Members of the committee have also interacted with congressional staff members as they consider legislation and funding bills to support the forensic science enterprise.

Notions such as uncertainty, reproducibility, repeatability, and coincidental matches were largely absent in forensic practice, but statisticians have successfully communicated the central role they must play in any forensic analysis.

Additionally, the committee has made efforts such as writing articles for *Amstat News* and sponsoring sessions at the Joint Statistical Meetings to draw statisticians' attention to the need for research in this area and the impact their research can have.

Overall, the statistics community has contributed significantly to forensic science improvement efforts, especially in research collaborations. One noteworthy effort is the National Institute of Standards and Technology–funded Center for Statistical Applications in Forensic Evidence. Headquartered at Iowa State University, the center is a multi-university consortium that has provided statisticians with the means and a supportive, collaborative environment to improve the accuracy of the analysis and interpretation of forensic evidence. CSAFE has reached thousands of forensic practitioners worldwide through its training and education program.

The statistics community has played an important role in communicating to many in the forensic science and legal communities the importance of probabilistic thinking when analyzing and interpreting evidence. Notions such as uncertainty, reproducibility, repeatability, and coincidental matches were largely absent in forensic practice, but statisticians have successfully communicated the central role they must play in any forensic analysis.

CHALLENGES
for Statisticians and Researchers

Even though significant research and infrastructure progress has been made in the last decade, much work remains. We've identified some of the major challenges statisticians and researchers continue to face.

Committee members recruited new members to their ranks, resulting in a growing number of statisticians working on forensic science issues. However, there are more problems to deal with than there are statisticians to work on them. A challenge moving forward is finding statisticians and researchers to continue working on these issues. In addition, funding levels to conduct research at the interface of statistics and forensic science remain low, limiting the progress that can be made. Additional research investments by the federal government would have direct benefits to forensic science and the indirect benefit of attracting more researchers into the field.

What is the source of the evidence found at the crime scene? The "question of source," determining whether a crime scene sample and suspect sample come from the same source, is one of the fundamental forensic science problems that distinguishes forensic science from other scientific disciplines, and the lack of statistical infrastructure to support this problem is problematic. While statisticians may try to place this problem within the context of statistical learning or model selection problems, it is important—as with any applied problem—for statisticians to understand the forensic practitioner's needs and where statistics and probability will help. This kind of understanding can take time to develop, but until the forensic statistics community truly listens to forensic scientists, we risk solving the wrong problem.

Even now, there is a significant gap between the views of many in the forensic practitioner community and the views of statisticians and other scientists engaging in forensic science research. Understandably, practitioners do not want to hear their way of doing analyses can be improved or, worse, that they may be wrong. Practitioners may

fear losing some degree of reputation for their discipline. Yet, effective collaboration requires forensic practitioners be open to new approaches to analyzing and interpreting evidence and willing to introduce more quantitative methods into their practice. Statisticians need to communicate clearly that the target of research is an improvement of methods and processes and not the performance of individual forensic analysts.

Statisticians also have much to learn about technology transfer. What is the best way to introduce new technologies into forensic laboratories? Challenges are numerous. Practitioners may be resistant to changing their current practice and trying new methods. They may be reluctant to trust an algorithm they need help understanding, has not been extensively tested, or may rely on hidden and untestable assumptions. Some research in medicine has suggested that even when practitioners see for themselves the high performance of an algorithm, they still do not want to use it. In this light, it is essential that algorithms proposed for the criminal justice system be designed with fairness, accountability, and transparency in mind.

A common concern of practitioners is that quantitative approaches are being designed to replace human decision-making with algorithmic decision-making. While we know this is not true, it once more reflects that we statisticians need to be more effective at communicating what we are trying to achieve. It is critically important to understand barriers to adopting new quantitative technologies in forensic practice and determine the best way to use algorithmic results to guide human decision-making.

Communication challenges also arise in the courtroom when statisticians report the findings of statistical analyses to law professionals and lay members of the jury. Models are often presented in both the investigative phase and in court. It is difficult to describe statistical evidence and complex models to nonexperts in clear and understandable terms. Likelihood ratios are easily understood by statisticians but rarely by others. Statisticians must improve communication skills while delivering essential basic quantitative training in convenient formats to all those involved in criminal trials.

RECOMMENDATIONS
for Moving Forward

The fair administration of justice, both to prevent the incarceration of innocent people and ensure the guilty are caught and punished, requires contributions from lawyers, judges, forensic practitioners, and scientists of all types. Statisticians' expertise in study design, data analysis, data visualization, and data interpretation and reporting has much to offer in improving forensic science practice. We have provided a few recommendations that, if implemented, could go a long way to positively affect the criminal justice system.

As statisticians, we must continue to engage and partner with the forensic science community to identify pressing problems and work toward practical solutions that can be implemented. Increased research funding and activity are needed, including fundamental statistical research that can provide the foundation for most forensic disciplines. Researchers should also design realistic studies that honestly replicate the conditions under which forensic practitioners work, and any forensic method being used or could be used in the future should be tested using sound evaluation procedures.

We must also look at ways to train top-tier statistics students to work with forensic practitioners and legal professionals to solve the issues in analyzing and interpreting forensic evidence. Developing university courses and encouraging them to get involved in professional organizations would help interested students have opportunities to research important forensic matters.

Along with increased research activities comes the need for statisticians to find better ways to communicate our findings to not only forensic practitioners but also to judges, lawyers, and the general public. We must create publicly available resources the forensic and legal communities can use and share, including databases, code, and training opportunities.

If you have ideas or would like to get involved, contact ASA Director of Science Policy Steve Pierson at *pierson@amstat.org*. ■

MORE ONLINE
Learn about activities informed by the Advisory Committee on Forensic Science at *bit.ly/3WdTpmb*.

Hundreds Celebrate International Day of Women in Statistics and Data Science

The inaugural International Day of Women in Statistics and Data Science took place October 11 with support from the Caucus for Women in Statistics, Portuguese Statistical Society, American Statistical Association, and 35 other statistical and data science organizations around the world.

The global 24-hour event saw 205 statisticians and data scientists from 36 countries, of which 55 percent were academics, 17 percent were students, 10 percent worked in nonprofit organizations or other, 9 percent were business or industry workers, and a final 9 percent worked in government.

Both fascinating and diverse, sessions included presentations about work-life balance, gender issues in statistics, and COVID-19 studies. Discussions provided an opportunity for participants to share common worries and challenges faced by women in the field.

Sessions

The welcome session featured Katherine Ensor, past president of the ASA; Miguel de Carvalho, Portuguese Statistical Society president; Nairanjana Dasgupta, Caucus for Women in Statistics president; Jessica Kohlschmidt, CWS executive director; Vanda Lourenco; and Tomi Mori, CWS past president.

The University of Otago and New Zealand Statistical Association sponsored "Women in Statistics and Data Science: Career Journey, Perspectives, and Opportunities in New Zealand" by Claire Cameron, Jill Haszard, Gabrielle Davie, Ella Iosua, Alice Kim, and Nokuthaba Sibanda.

Women in Statistics in Korea sponsored "Gender, Statistics, and COVID-19 in Korea," featuring Man-Suk Oh, Sohee Park, Tarim Lee, and Eun-Kyung Lee.

The International Indian Statistical Association sponsored "Young Female Statisticians from India," featuring Shuvashree Mondal, Ritika Jain, Upasana Roychowdhury, and Sayantee Jana.

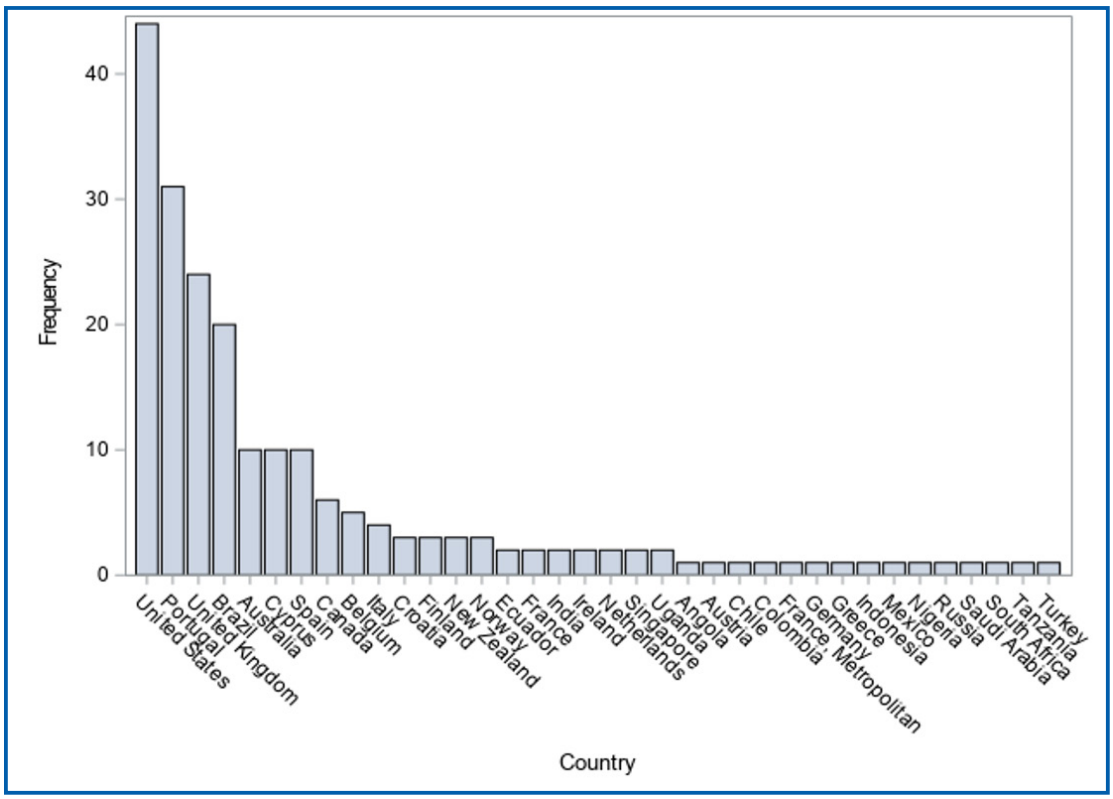
The Portuguese Statistical Society, CWS, and ASA sponsored a speed networking session so participants could get to know each other in a small group setting.

The Pak Institute of Statistical Training and Research hosted an interview with Rashida Bukhari by Saleha Habibullah.

The Royal Statistical Society Young Statisticians Section organized a joint session with the Career-Young Statisticians Section of the Irish Statistical Association. Norma Bargary from the University of Limerick, also one of the society's statistical ambassadors, served as the speaker and gave an overview of functional data analysis and its applications to sports analytics.

Rosa M. Crujeiras presented "Turning Around: On Some Statistical Methods for Circular Data," which was sponsored by the Spanish Statistical Society.

Biomathematics and Statistics Scotland featured a talk by Paula Moraga, "Geospatial Data Science for Public Health Surveillance."



Most participants came from the United States, Portugal, and United Kingdom.

CWS sponsored a session with Shili Lin, Jessica Kohlschmidt, and Deedra Nicolet that allowed them to share ideas about how to plan a Florence Nightingale Day, a celebration of women in statistics and data science for middle- and high-school students.

CWS and the Portuguese Statistical Society hosted Alexandra Schmidt, Ivette Gomes, and Gerda Claeskens, who presented "Diverse Statistical Approaches: Origins and Fundamentals."

The Society of Clinical Trials sponsored the session "Biostatistics Leadership in Oncology Clinical Trials," which highlighted leadership and contributions made by three female biostatisticians in cancer clinical trials representing three major cooperative groups funded by the National Cancer Institute: Alliance, SWOG, and the Pediatric Brain Tumor Consortium. Sumithra Mandrekar, Megan Othus, and Arzu Onar-Thomas were the presenters.

"Methods for Cluster-Correlated Data Analysis" was given by Kendra Plourde, Aya Mitani, and Kerrie Nelson and sponsored by CWS and the Statistical Society of Canada.

CWS and SSC also co-sponsored the session "Work-Life Balance Throughout the Academic Research Center," with speakers Maya Mathur, Bei Jiang, and Josee Dupuis and discussant Sarah Lotspeich.

Nairanjana Dasgupta and her graduate student presented "The Power of R-Power" in a session sponsored by CWS.

The International Society of Bayesian Analysis also sponsored a session about R with speakers Federica Zoe Ricci, Isabella Deutsch, and Katie Buchhorn.

Micaela Parker, executive director of the Academic Data Science Alliance, discussed the community and its vision for a just, equitable future.

The concluding session featured Tomi Mori, Jessica Kohlschmidt, Cynthia Bland, Dong-Yun Kim, and Miguel de Carvalho.

Learn More

Recordings from the talks will be made available at *idwsds.org* and the CWS YouTube Channel, *bit.ly/3hpwMwg*. There are also greetings from people around the world and videos with information about the various societies involved in the International Day of Women in Statistics and Data Science. ■

SIGNIFICANCE HIGHLIGHTS

December Issue Sheds Light on FIFA World Cup

As the FIFA World Cup 2022 gets into full swing in Qatar, the December issue of *Significance* sheds statistical light on events on and off the field. We dig into the data behind penalty shootouts and red cards, as well as the numbers behind worker deaths in the country whose human rights record has been so widely criticized. Fear not, those of you who are not soccer fans; this issue also investigates the role of machine learning in protecting vulnerable children, explains how stats can prevent blackouts, and celebrates the 60th anniversary of the Statistical Society of Australia, with profiles of four inspiring members past and present.

December Highlights:

- **Penalty Shootouts:** How should managers choose which players take penalties? James Jackson analyzes England's painful defeat against Italy in the 2020 Euros. Could a more statistically rigorous approach to picking penalty-takers have led to a different result?
- **Soccer's "Red Card Myth":** Soccer fans, pundits, and even managers have long debated whether having a player sent off can actually make a team stronger. Matthew Dowsett takes a Neymaresque dive into the data.
- **Human Rights in Qatar:** The human cost of the FIFA World Cup 2022 troubles human rights groups and soccer fans, alike. However, measuring it is extremely difficult due to elusive, vague, and misleading data sources on worker deaths, as Megan Price explains.
- **Children's Social Care and Machine Learning:** The idea that machine learning can improve children's social care is attractive, but fraught with challenges. The veil of secrecy around predictive analytics in public services must be lifted, say Michael Sanders and Vicky Clayton.
- **Energy Forecasting, Part One:** We only notice our reliance on energy when our supply is disrupted. Amanda Lenzi and Mihai Anitescu answer six key questions about the role of statistics in energy.
- **The SSA Is 60:** Celebrating the 60th anniversary of the Statistical Society of Australia with profiles of four members past and present.

Access the digital version of *Significance* by logging in to your ASA account at *https://amstat.users.membersuite.com/home*. Print issues will be mailed to subscribers soon.

Significance is also online at *www.significancemagazine.com.* ■

Q&P Section Readies for 39th Research Conference

The 39th American Statistical Association Quality and Productivity Research Conference will be held June 6–8, 2023, in Houston, Texas, at the University of Houston.. The purpose of the conference is to improve the quality of products and services and the productivity of industries by stimulating the research and development of better statistical methods for quality and productivity improvement. The 2023 conference theme is "Statistics, Deep Learning, and the People Side of Process."

The conference will honor Nicole Radziwill, senior vice president of quality and strategy at Ultranauts, who will give a talk about the latest innovations in artificial intelligence, productivity improvements already being observed, and bias and data poisoning that can threaten even the best model. She will also tell a unique story that will make listeners question the emerging nature of AI reality.

Conference registration begins in February. For an additional fee, two half-day courses will be delivered before the conference on June 5 (separated by a lunch break). Machine Learning–Based Process Modeling and Monitoring will be led by Ying Lin from the University of Houston and Fair Machine Learning in Health Care will be led by Na Zou from Texas A&M University.

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

To submit a contributed paper, send the session title, authors' names, and a 50-word (maximum) abstract to John Terrell at *jaterrel@Central.UH.EDU*. Questions about the conference can be emailed to Jamison V. Kovach at *jvkovach@uh.edu.*

For up-to-date information about the conference program, short courses, registration, scholarships, and hotel, visit the conference website at *www.uh.edu/qprc2023.*

MY ASA STORY

Mike Jadoo, Bureau of Labor Statistics Economist

I work at the Bureau of Labor Statistics in the Office of Productivity and Technology on productivity measures (Total Factor Productivity). I first learned about the American Statistical Association from a coworker who was going to the Joint Statistical Meetings. I decided to join after seeing all the resources the ASA had to advance my education and help my career. The ASA has many educational resources available on anything related to statistics. There are also resources for those needing help with their careers, including job announcements. Something I found amazing were the many types of community resources from ASA sections.

One can meet a lot of people working in different fields that use statistics and data science by joining any one of the sections or communities. These communities regularly post interesting information regarding workshops, lectures, and even job opportunities.

I first got involved in the ASA by competing in a Government Statistics Section data competition in which I used Bureau of Transportation Statistics data to come up with an analysis of traffic data. I presented at JSM and gained a lot of experience, which I was able to use at my job.

I also presented at the Conference on Statistical Practice about an R function I created that replicated a statistical formula I use at work. The presentation went well, and I met lots of people within my agency and across different sectors who were doing similar work.

A rewarding experience I had from being part of the ASA was attending a statistics education workshop about a better way to teach students the basics of statistics using storytelling. After attending the workshop, I used that material in one of the classes I taught at Montgomery College, where I was an adjunct professor teaching data analysis fundamentals. The impact it had on my students was amazing, and it made teaching basic statistics easier for me. Moreover, it made statistics fun for the students, enhancing their overall experience. ■

Jadoo

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Meet Alex Piquero, Head of the Bureau of Justice Statistics

Alex R. Piquero was appointed by President Joe Biden in June of 2022 to serve as director of the Bureau of Justice Statistics and sworn in August 15, 2022. Prior to that, he was professor and arts and sciences distinguished scholar in the department of sociology and criminology at the University of Miami. He has received numerous research, teaching, and service awards; is a fellow of both the American Society of Criminology and Academy of Criminal Justice Sciences; and a recipient of the ACJS Bruce Smith Sr. Award for contributions to criminal justice and Distinguished Lifetime Achievement Award from the division of developmental and life course criminology.

Piquero

What about this position appealed to you?

Aside from the honor of serving the president of the United States of America, I have long been a user of BJS data and research reports. I've known many people who have worked there and led the agency, as well as within the National Institute of Justice, and have a deep appreciation for the important work done by BJS on crime and justice data collections. As well, being able to partner with Nancy La Vigne, who heads BJS's sister science agency, NIJ, represented 'lightning in a bottle' so to speak. These types of opportunities—to lead one of the 13 federal statistical agencies and help shape the national landscape of criminal justice statistics—do not come around often. I am so very fortunate.

Describe the top 2–3 priorities you have for the Bureau of Justice Statistics.

I have the following four priorities for BJS:

1. **Modernize:** Develop systems and resources to ensure statistics are accessible, usable, and relevant for 'different people who need different data in different ways for different reasons'
2. **Engage:** Strengthen the relationships and strategic partnerships with academics, practitioners, political officials, all levels of government, and the general public
3. **Elevate:** Encourage and support professional development of BJS team members in various ways
4. **Collaborate:** As statistical official for the Department of Justice under the Evidence Act, help others understand the methodological and statistical issues that underpin a lot of what the department does

What do you see as your biggest challenge(s) for BJS?

There are the usual budget and staffing challenges, but in my mind, the most important challenge is ensuring the relevance of BJS not just within the federal government, but with the varied stakeholders we speak to. There are many people and organizations in the crime statistics space, and we need to ensure BJS is the go-to place for reliable, timely, credible, and accurate crime and justice statistics and data.

How can the statistical community help you?

I think the statistical community is a wonderful community of like-minded people who care deeply about the importance of data and statistics to help inform policy and decision-making outside our agencies. I think being a member of the Interagency Council on Statistical Policy and attending various events within the statistical community, such as the Committee on National

Statistics, is critical to learning what is happening with my peers and their agencies, the challenges they are facing (we likely face many of the same), and the opportunities that await with respect to collaboration.

One of my main goals is to communicate to the public the importance of accurate, credible, and reliable data on crime and justice issues. It is important for the public, data users, and policymakers to know what data is available to inform programs and decisions on criminal justice matters and what more we can do with the adequate investment of resources. Learning how other agencies are able to navigate the communication space will be helpful to me.

Prior to your tenure, what do you see as the biggest recent accomplishment of the agency?

Prior to coming to BJS, I had a deep appreciation for the wide-ranging accomplishments of BJS, including, of course, the National Crime Victimization Survey and the recidivism and Law Enforcement Management and Administrative Statistics studies. BJS has also been directly involved in the National Crime Statistics Exchange and helping police agencies transition to the National Incident-Based Reporting Service as the FBI moved away from the summary reporting system.

These aside, I think the biggest accomplishment of BJS has been providing statistical breakdowns across various demographic categories, including race/ethnicity, age, sex, and sexual orientation and gender identity. These are key issues in the federal statistical system, as well as the administration's goals more generally. And they are critical issues in the crime and justice landscape. ■

NSF Appoints New Statistics Program Directors


Yulia Gel


Edsel Peña


Yong Zeng


Jun Zhu

Yong Zeng of the University of Missouri-Kansas City became a permanent program director and Jun Zhu of the University of Wisconsin-Madison became a rotator program director of the Division of Mathematical Sciences in the National Science Foundation Directorate of Physical and Mathematical Sciences this fall. They join Yulia Gel of The University of Texas at Dallas and Edsel Peña of the University of South Carolina-Columbia, who are in their second and third years, respectively, as rotator program directors of the statistics program. Zeng previously served in the Division of Mathematical Sciences from 2015–2018 and 2019–2021.

In February of 2022, longtime Permanent Program Director Gabor Szekely retired from NSF, while Huixia (Judy) Wang completed her four years as a rotator program director last September. Wang returned to her home institution, The George Washington University, where she is now the chair of the statistics department.

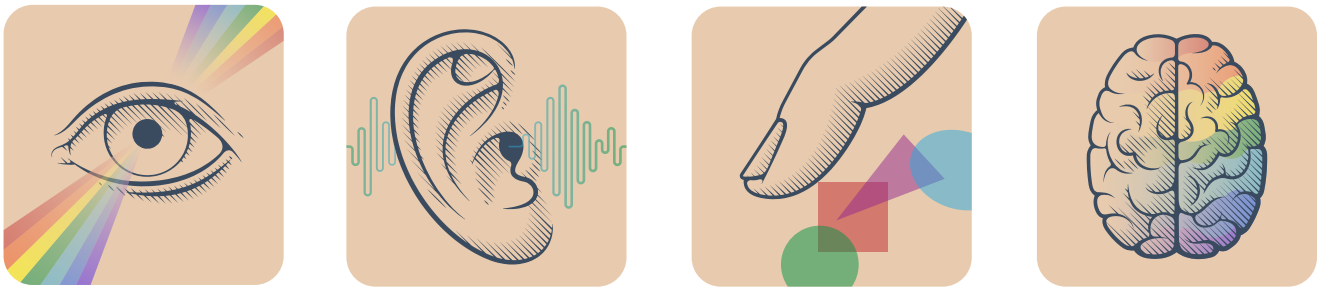
Program directors, permanent and rotator, are responsible for managing the portfolio of awarded projects in their disciplinary programs, as well as those from special research programs in the division and/or foundation. They organize review panels charged with making recommendations regarding funding priorities of submitted grant proposals, review grant proposals that do not require a panel and/or ad hoc reviews, decide which proposals to recommend for awards and declinations, perform outreach to the relevant professional communities, and actively continue their own research activities. They also initiate or participate in the development of new program solicitations across the foundation.

To learn more about the NSF statistics program, visit *https://beta.nsf.gov/funding/opportunities/statistics.* ■

JEDI CORNER

From Visualization to 'Sensification'

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



Data visualization and exploratory data analysis have been recognized in recent decades as important parts of statistics and, with the development of tools to routinely produce high-quality infographics, they have become central public-facing aspects of statistics and data analytics. Visualization is important for a few reasons: communication of data and research findings; exploration that reveals anomalies and unexpected patterns in data; and evaluation of complicated models. In short, statisticians and analysts use visualization tools to not just sell their work with pretty pictures, but to find problems with their models and construct new procedures as part of data-analysis workflow. But visualization excludes people with visual impairments, an increasingly important issue as the population gets older. How can statisticians and analysts provide some of the benefits of the dataviz revolution? There have been some direct steps, such as the use of color-blind-friendly palettes and screen-manipulation tools that allow images to be magnified at will so users with weak vision can navigate an image to see details. Awareness of the natural range of visual acuity can motivate statisticians, and graphic designers more generally, to consider principles of communication and information transfer. For example, there is no reason why all the information in a data set needs to be crammed into a single graph. A grid of plots can show patterns more clearly, and a person with weak vision can first see the big picture on the grid and then focus on individual plots.

Just as sidewalk curb-cuts can improve the daily commute of pedestrians and cyclists, as well as people who transport themselves using wheelchairs, steps motivated by the need to communicate with people with low visual acuity can result in broad-based design improvements. In addition, awareness of this one dimension of diversity within the communities of statistical analysts and users can help them think about dimensions of variation in these populations. The next step beyond making statistical graphics more accessible is to go beyond visualization entirely and consider "sensification," or "vivification," using senses other than sight. This is a wide-open area. To start with, we want to go beyond traditional notions of the five senses and consider other forms of perception, including the muscular resistance sense (haptic feedback) and balance and kinesthetic senses (as with Wii technology), as well as sound and touch, which are the most obvious alternatives to visual communication.

Direct mapping from vision to these other senses will not be possible: there is no obvious way to convert a scatterplot, for example, to a "readable" sonic signal. A pinboard would be able to translate an image to something that can be felt, but at a much lower resolution than most people's vision. On the other hand, communication can be dynamic, and voice dialogue can be applied so users can ask questions to zoom in and get the distinguishing details they need. The nonvisual senses convey much less information per second, but they do have unique advantages in human communication. Sound perception, unlike much of vision, does not require conscious attention, which is why we can listen to the news or to music while we clean the dishes. This suggests the possibility of data sonifications that run in the background while we work. Sound also has a time dimension that could make it a natural choice for monitoring iterative processes, which are characteristic of much modern statistical computing. The clash of timbres can represent poor mixing of processes, with different sorts of pings corresponding to places in which algorithms are getting stuck or yielding questionable results.

Music can also reach us on an emotional level in a different way than visual images. Marina Koren, in *The Atlantic* article "The Spookiest Sound in Astronomy," gives an example of a sonification in astronomy produced by data perception researcher Kimberly Arcand that engages the emotions ("a spooky, cosmic wail") in a way that maps to underlying "wavelike movements" arising from the pulsing of a black hole. As with other examples of exploratory data analysis, this pattern was not originally anticipated but made perfect sense once it was vivified.

From a different direction, the muscular resistance sense offers the possibility of immediate feedback, which is not easy to do with visual displays and could be useful for exploring model fitting to the extent that challenges in the fit could be represented by physical resistance in the haptic controller. Indeed, visual mouse-based drag-and-drop tools can be considered a crude and not very effective imitation of the two-way engagement characteristic of muscular resistance and body movement, similar to the way infants interact with the world around them compared to the capabilities of adults.

The goal is to understand the advantages of the different senses and optimize them within a statistical workflow, not to simply try to replace visual cues with other senses—or vice versa. For example, we are so paper-based as a culture that music, our cultural organization of pleasing sound, is communicated on paper and we have not updated that because of errant backward compatibility.

Again, new ideas of sensification are appealing in part for their direct potential in making quantitative data analysis and modeling tools available to the visually impaired, and also as an example of the way in which efforts to improve inclusion can potentially yield benefits to the general population. That said, this is all research—that is, as noted in "Delivering Data Differently" (*https://arxiv.org/abs/2204.10854*). But we have to start somewhere.

Right now, there is already sophisticated hardware and software available that could allow new sensification tools to be developed, tools we hope will allow vision-impaired researchers and consumers to make more effective use of statistics and broaden traditional visualization so it is more effective (e.g., sonifications that can keep us informed while running in the background and voice dialogue and haptic feedback that allow us to interact directly with data and models). We also should consider how these tools might be assessed once they are developed.

Many open questions remain with visual displays. For example, in what settings is exponential growth best presented to the general public on a log scale? As statisticians, our ideas about evaluation and communication develop in tandem with new methods. ■

Andrew Gelman is a professor of statistics and political science at Columbia University. He has earned numerous awards, including the Outstanding Statistical Application Award, the award for best article published in the *American Political Science Review*, and the Mitchell and DeGroot prizes from the International Society of Bayesian Analysis. He has also published several books, including *Red State, Blue State, Rich State, Poor State*. Find him at *www.stat.columbia.edu/~gelman*.

Gwynn Sturdevant's goal is to deliver data in a way that does not focus largely on connecting data to visual senses. She is also passionate about supporting community-led research involving those facing entrenched inequalities and revamping current introductory statistics courses. She is an international keynote speaker, co-founder of the Harvard Data Science Initiative's R User Group, and administrator of RForwards. Learn more about her at *www.nzgwynn.com*.

COMMITTEE SPOTLIGHT

Scientific and Public Affairs Advisory Committee

Chaitra H. Nagaraja, Scientific and Public Affairs Advisory Committee Chair

Amstat News is spotlighting ASA committees and their activities. This month, we feature the Scientific and Public Affairs Advisory Committee and ask Chaitra Nagaraja a few questions about the committee's purpose and goals.

In your own words, what is the purpose of your committee?

Members of the ASA Scientific and Public Affairs Advisory Committee keep track of and are responsive to current events relating to the collection, analysis, and use of statistics. We help decide whether the ASA should comment on, or even support, for example, rule changes or legislation, generally in the federal government. At times, we draft these statements, as well.

Given the ever-expanding role of data in public life, there is much to discuss. The issues we focus on during our meetings reflect the varied interests of our members.

Why did you accept the position to chair the committee?

I've been interested in policy issues and the history of official statistics since I was a researcher at the US Census Bureau. These interests were what spurred me to join SPAAC. I've enjoyed serving on the committee and became chair to have a larger impact on policy decisions.

How often does the committee meet to plan activities?

We meet online once a month and have discussions through email during the intervening periods.

What are some recent or upcoming committee events you would like to highlight?

From commenting on federal policy to helping draft amicus briefs, SPAAC has been involved in a range of activities. Here are a few recent examples:

- Last year, the White House Office of Science and Technology Policy posted a request for information in the *Federal Register* about developing a federal scientific integrity policy framework. The framework would apply across federal agencies and provide a single set of guidelines to manage the interface between government and science. We were interested in responding not only because statistics is a core part of science, but because of our members' prior work on thinking about similar frameworks for federal statistical agencies. Last April, the ASA submitted a response written jointly by SPAAC and the ASA Committee on Professional Ethics (*www.amstat.org/docs/default-source/amstat-documents/pol-scientificintegrityfc.pdf*).

- As part of our outreach during each JSM, we organize the Statistical Significance poster competition. Last year, we had more than 30 contenders. In addition to presenting their poster at JSM, participants created a one-page piece illustrating for a general audience how their research benefits society. The winning entry focused on using statistics to more efficiently schedule surgeries (*bit.ly/3Wyrj5p*). We enjoyed meeting the presenters in person, the first time since the pandemic began.
- We've also provided ongoing feedback to the ASA regarding draft legislation by the Department of Education on advancing access to data science curriculum from preschool onward. As all of us must manage uncertainty in our lives and an increasing number of jobs require the use of data, educating students from an early age about statistics and data science topics is important. This data literacy bill was written by ASA Science Policy Fellow Ed Wu and ASA Director of Science Policy Steve Pierson, both of whom are ASA staff liaisons to SPAAC. Since JSM was in Washington, DC, last year, the ASA organized congressional visits for interested members to advocate for the bill's introduction.

What are some upcoming events you are most excited about?

The final report from the Advisory Committee on Data for Evidence Building was recently published. This committee was formed to provide guidance for following through with the aims of the Foundations for Evidence-Based Policymaking Act of 2018.

SPAAC is looking forward to watching the implementation of the committee recommendations and contributing to the discussion when appropriate. For example, at our most recent meeting, members we advised on an ASA letter to the Office of Management and Budget (*bit.ly/3UXPhFU*) to promote the Advisory Committee on Data for Evidence Building and advocate for boosting the staff of the chief statistician.

Any additional information or news you'd like to share about the committee with ASA members?

I encourage everyone to communicate with us about issues you believe statisticians and statistics should have a higher profile on. This committee is an important conduit between ASA members and the ASA Board and staff. You can also get involved by advocating for the data literacy bill with your congressional delegation or volunteering to serve on the committee.

Further Reading

- **20 Years of Statistics Advocacy: After Two Busy Decades, SPAAC Wants to Be Busier**
  bit.ly/3USLKZj
- **Advocating for the Profession: The ASA Wants Your Recommendations**
  bit.ly/3Bx3Kl2
- **Board Approves Revised Public Statement Process**
  bit.ly/3FSWQti ■

STAT*tr@k*

Following a Graduate Student's Path: Getting to Know Robert Tumasian III

A fourth-year PhD candidate in biostatistics at Columbia University, Robert Tumasian III has a full plate. He is writing his dissertation, collaborating on several additional projects, fulfilling his duties as a teaching assistant, and serving as a dedicated volunteer with the American Statistical Association. He is also the founder and president of Columbia University's ASA Student Chapter and co-chaired the Student and Young Professionals Committee of the ASA's Justice, Equality, Diversity, and Inclusion (JEDI) Outreach Group with Lydia Gibson last year. Be inspired by this candid Q&A with Robert.

Why biostatistics?

I have been drawn to numbers and formulas and how they can be used to address real problems as far back as I can remember. Throughout my middle- and high-school biology classes, I also became captivated by the power and complexity of the human body. This drove me to find a subject that merged mathematics and biomedical science during my undergraduate studies, but I struggled to pinpoint a good fit.

Thankfully, during a summer conference at Harvard, I discovered the perfect harmonizer: biostatistics! This encounter motivated me to explore its many applications, such as the exciting and extensive world of clinical trials, by participating in a wide range of courses and research projects at various institutions.

Currently at Columbia, I have been devoted to learning about clinical trial procedures and the central role statisticians play at every stage of the drug lifecycle, as well as assembling a novel seamless trial design that can assist in accelerating the assessment process and expediting treatment delivery.

My academic journey has solidified my decision to pursue a career in regulatory science through a statistical lens.

What does a typical day look like for you?

As a fourth-year PhD candidate in biostatistics, I have completed all my coursework and passed my qualifying and oral exams, so now I focus heavily on research. Most of my day is reading articles to stay updated on clinical trial methodology, writing papers for publication (including the daunting dissertation), applying for jobs, and fulfilling my teaching assistant responsibilities.

Although my plate is usually overloaded, I try to incorporate a long walk and some music into my daily schedule to clear my head and take a break from the computer screen. Seeing a lot of happy dogs on the street is also uplifting.

Life as a graduate student is not just a major test of your knowledge; it demands exceptional time management. Balancing all my tasks can often be overwhelming, but I have conquered this by keeping my eye on the prize.

What are some skills you have developed by being involved in the ASA?

The ASA has supplied me with countless professional development opportunities that have equipped me with essential interpersonal and communication skills to be successful in the workplace. Attending the

2021 Conference on Statistical Practice enabled me to obtain vital knowledge that has fostered my research aims and career objectives.

Furthermore, through listening to several talks and presenting a portion of my dissertation at the 2022 Joint Statistical Meetings, I was able to gather effective strategies for conveying numerical findings to different audiences. I have also expanded my network of government and industry experts by engaging with the ASA Biopharmaceutical Section and Government Statistics Section.

I want to continue promoting and contributing to the growth of the ASA, and I hope to be elected as an ASA Fellow and serve as ASA president one day.

What are a few takeaways from your experience with the JEDI Outreach Group?

I stumbled upon the JEDI Outreach Group on the ASA website around the fall of 2021. Their mission to enhance diversity across the statistical fields resonates with my values and prompted me to become a member. To fuel creativity and innovation, it is imperative to cultivate welcoming and nonjudgmental spaces that nurture a free exchange of ideas and perspectives from individuals of all backgrounds.

Additionally, there are widespread obstacles to identifying and securing funding for crucial training and research efforts, including for those in marginalized populations, which require immediate action. I have also recognized the importance of advocating for your needs, whether it be on your college campus or your job. You should always stand up for yourself.

Name three reasons to participate in the ASA's Student & Young Professionals Committee.

Co-chairing the SYPC with Lydia Gibson this year has been really rewarding. First, the committee offers a friendly platform for building strong connections with statisticians and data scientists at all levels and in many spheres. It also offers guidance for navigating a difficult conversation or confronting a certain challenge you may be facing with a peer, coworker, or boss. We encourage everyone to voice their concerns and ask for help without trepidation.

Finally, the SYPC organizes and hosts numerous events tailored to the requests of its membership and frequently partners with the other five JEDI committees. For instance, we have held virtual coffee chats through our Slack channel on such topics as applying to graduate school, soliciting and writing competitive reference letters, and debriefing ASA conference experiences for future improvement.

Name one or two blogs, podcasts, or books you would recommend.

Unfortunately, I do not follow any blogs and cannot recall the last time I read a book for leisure (textbooks have scarred me), but I would definitely recommend tuning into the ASA's monthly *Practical Significance* podcast. Hearing the inspirational stories of individuals from different companies within the statistical community has brought many new opportunities to my attention and pushed my aspirations forward.

Though I have not kept up with it, I would also suggest the *Freakonomics Radio* podcast, which shares pressing information in a relaxed and graspable manner while maintaining the seriousness of the material. Previous episodes have focused on issues such as wage stagnation, college admissions, crypto, and the danger of traffic lights.

Name a few people, living or dead, you would invite to a dinner party.

I wish I could sit down with the late Supreme Court Justice Ruth Bader Ginsburg to gain her insights into multiple domestic and international matters and discuss possible solutions together. She was a trailblazer and role model to myriad people, both within and outside the law. I would also invite my mom because she's always fun to be around. And chef Gordon Ramsey, so he can prepare an incredible meal for us and I can attempt to absorb his culinary expertise.

What is your dream job?

Creating computational strategies to strengthen the evaluation of medical products and serving at the forefront of regulatory science are lifelong goals of mine. My chief career prospect is to join the FDA as a mathematical statistician and grow into a leader at the agency. I hope to collaborate with interdisciplinary public health practitioners there to enrich the design and analysis of clinical trials and contribute to ensuring the safety (including the abuse potential) and efficacy of experimental therapies are measured properly and efficiently.

I am also interested in roles at the White House Office of National Drug Control Policy. I am passionate about increasing access to substance abuse interventions, and I want to help improve and shepherd critical policies toward preventing and reversing addiction, especially in relation to mitigating the insidious opioid epidemic. ■

STATS4GOOD

The 2023 Challenge List: Most Important Questions in Data for Good

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.

As a new year begins, Stats4Good is starting a new feature. Just as last month reviewed the past year in Data for Good, the January column will look ahead. Glancing at many of the highest priorities in D4G, some stand out as opportunities of the moment. Some are areas in which statistical science has advanced, while others are areas in which the needed technology doesn't yet exist. Some are fairly unglamorous—the hard work on infrastructure needed to lay the analytic foundation of the future.

This challenge list shines a light on exciting new opportunities and is meant to encourage the D4G community to tackle overlooked or under-resourced concerns. Lifting up a single challenge in each area, the goal is to highlight opportunities with the most potential impact for the greater good.

Biostatistics: Leveraging COVID Learnings

The COVID-19 pandemic changed the world and science. Not since the Manhattan Project's invention of big science have world events (sadly, inexpressibly tragic ones) had such an impact on how science is done. The number of papers has exploded, even as the time to publish—driven by the urgency of the crisis—has become far less. The scientific community has done more than stop a pandemic faster than was ever imaginable; it has also created ways of working to empower rapid response to future events—but only if we go above and beyond once again to document and teach how Data for Good has changed so these new models of working can be leveraged. This moment is the last of the COVID crisis and the first of the next! We, as a community, must rise to meet the challenge.

Environmental Advocacy: Climate Change Impacts and Remediation

Forget about climate change as maybe, if, or when. The damaging effects of anthropogenic climate change are all around us right now! Identifying the impacts that have already been realized and developing strategies and methods to address them are

desperately needed. Prevention is, of course, still needed. However, the sad truth is that climate change has already caused widespread damage and is getting worse every day. The problem has grown beyond prevention to include identification and mitigation. This is one area in which a small number of researchers focused on a specific problem can have the greatest impact through hackathons, capstone projects, and public outreach and mobilization. The opportunities and challenges are all around us and all around the world.

Data: Unique, Secure, Transferable Identifiers

Research on better methods can lack wow factor. However, it is vitally needed to support everything else on the list, making it one of the most important endeavors we have in this or any other year. This year's top challenge in the data category will allow individuals to be tracked across multiple projects by different stakeholders, enabling propensity studies and wider collaborations. It will leverage experts from other areas. In the never-ending arms race for more secure data, people who exploit others by exploiting their data have been gaining. Now is the time for renewed effort in the science of sharing data in a secure and trustworthy manner. In the final analysis, nearly everything we do will depend in part on this.

Data for Good Organization and Infrastructure: More Project Managers

I've said it before but it's going to continue to be a top challenge until there are even half as many as are desperately needed. Speaking frankly, dear friends, this is our single greatest weakness today. Maybe substitute your annual hackathon for a day to train new D4G project managers? Absolutely! Add a leadership and project management track to your university's data science program? Get started on it! When we look back on 2023, this may have the greatest impact of all.

Human Rights: Critical Race Theory as a Statistical Practice

Critical Race Theory began as legal and historical questions about structural disadvantages by race and how to address them. In the years following the civil rights movement, scholars looked further into the mechanisms of how disadvantage has been built into our society and carried forward. Connecting the dots between historical oppression and modern disadvantages inherently includes statistical science. The last few years have seen the dawn of CRT as a statistical practice. Now is the time for new projects and collaborations—especially with experts in legal, historical, and sociological research—to more firmly establish the statistics and data science need to carry CRT forward.

The 2023 Challenge List is intended to inspire both discussion and action as ideas for research are shared, debated, and developed into conference papers, presentations, posters, and panel discussions. Capstone, master's, and PhD projects can focus on these areas of greatest need. Special issues of journals can be developed to focus on a D4G top challenge. This list can be used to launch new collaborations, inspire hackathon themes, and much more.

At the end of the year, I will announce a 2023 Hall of Fame for leading accomplishments in each area. This is our opportunity, and now is the time to take new high-impact action in Data for Good.

Getting Involved

This whole column has been about new opportunities; however, the ASA's Conference on Statistical Practice (*ww2.amstat.org/meetings/csp/2023*) will be in San Francisco February 2–4. With keynotes from 2023 ASA President Dionne Price and the Human Rights Data Analytics Group's Megan Price, the annual ethics panel, and much more, CSP is the place to be in February. I hope to see many of you there. ■

New Year Hopes for Andreas Georgiou as Court Decisions Loom

The persecuted former national statistician of Greece awaits human rights court decision, slander appeal hearing

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A new year brings with it hope. Hope that differences will be set aside, wrongs will be made right, and all will be better. Supporters of Andreas Georgiou, the persecuted former national statistician of Greece, have carried that hope for more than a decade, wishing for sense to prevail and vindication to be delivered. They have been disappointed time and again.

Since September 2011, Georgiou has been accused, investigated, tried, and tried again on various charges, all stemming from his time at the helm of ELSTAT, the Greek national statistical office.

Interviewed recently for *The Amherst Student*, Georgiou said his legal troubles are "always a little bit tiring to the heart to think about." But 2023 brings with it hope that justice, long denied, is still in reach.

A Fraught Beginning

Two important court cases are pending currently. One is with the European Court of Human Rights, where Georgiou is arguing that his right to a fair trial was violated. The other is with the Supreme Court of Greece, where he is appealing a lower court's decision to find him liable for "simple slander."

The origin of both cases can be traced to August 2010, when Georgiou was made head of ELSTAT. It was a fraught time in Greece. A new government had been elected the previous October and soon faced a sovereign debt crisis. Fiscal deficit projections were much higher than previously reported, and a multi-billion-euro bailout by the European Union and International Monetary Fund was needed to plug the financial hole.

Greece also needed to repair its statistical credibility. For years, Eurostat—the statistical office of the European Commission—had expressed reservations about the country's economic figures. In January 2010, for example, a European Commission report was scathing in its assessment of the state of Greek government deficit and debt statistics, identifying severe irregularities, inappropriate governance, political interference, and cases of deliberate misreporting of figures.

According to the report, "The problems faced in Greece go well beyond what can be tackled using only the statistical monitoring tools available to the Commission." It continued, "The Greek authorities need to tackle resolutely not only the outstanding methodological issues, but also and crucially they need to put in place transparent and reliable working practices …, and to revise the institutional setting in order to guarantee the professional independence and full accountability of the [Greek national statistical institute, formally known as the National Statistical Service of Greece, or] NSSG … ."

Two months later, NSSG was recast as ELSTAT, an independent statistical authority, and four months after that, Georgiou was appointed its president. Part of the work of ELSTAT was to review and correct methods and data. In November 2010, revised deficit figures for 2009 were sent to Eurostat. After that, Georgiou's legal troubles began.

First came accusations that these revised figures were artificially inflated and Greece was forced to suffer unnecessarily harsh austerity measures as a result. Charges were brought and subsequently dismissed several times by Greek courts, but it wasn't until 2019 that the case was formally closed.

Georgiou was also charged with violation of duty, chiefly for refusing to allow members of ELSTAT's board (at the time) to approve the revised deficit numbers prior to their being sent to Eurostat. He was charged, tried, and first acquitted in 2016, but was retried and convicted in 2017 following a successful appeal by prosecutors, landing him with a suspended two-year prison sentence.

The Meaning of Independence

Georgiou has always maintained his innocence, pointing out that the deficit figures released under his watch have been validated multiple times by Eurostat.

As to violation of duty, he insists he acted cor-

rectly and in keeping with the principle of professional independence as set forth in the European Statistics Code of Practice. The 2005 version, which was in force at the time, reads: "The head of the statistical authority and, where appropriate, the heads of its statistical bodies have the sole responsibility for deciding on statistical methods, standards and procedures, and on the content and timing of statistical releases."

In court hearings, Georgiou argued that, as head

Georgiou

of ELSTAT, sole responsibility for statistical releases was his—not the board's—and he was supported in this view by heads of other national statistical institutes, including those of Austria, Finland, France, Ireland, and Italy. However, the court rejected his defense and this reading of the code, so Georgiou appealed to the Greek Supreme Court, asking for an annulment of the violation of duty conviction, a retrial, and—most crucially—that a pre-trial question be put to the Court of Justice of the European Union.

Georgiou's legal team hoped for the CJEU to weigh in on the correct meaning and interpretation of the European Statistics Code of Practice, but the Greek Supreme Court rejected the appeal without seeking input from the CJEU. This paved the way for Georgiou's complaint to the European Court of Human Rights. His lawyers argue that his right to a fair trial was violated by the decision not to seek guidance from the CJEU on the correct interpretation of the code.

Since ECHR took up the case in October 2021, both the Greek government and Georgiou have had opportunities to file written arguments. The court's decision is now imminent.

Speaking the Truth

Georgiou's other pending case is his appeal against a civil suit that found him liable for "simple slander," meaning he defamed someone by making true statements. In July 2014, while defending against accusations that deficit figures were artificially inflated, Georgiou issued a press release in which he pointed out that ELSTAT figures had been repeatedly validated, whereas the quality and integrity of figures released in earlier periods had been frequently questioned (e.g., in the January 2010 report of the European Commission).

In response to this, the person previously responsible for Greece's debt and deficit figures brought a defamation case, and a court found in the complainant's favor in 2017. The ruling left Georgiou with a €10,000 compensation bill plus interest since 2014 and the complainant's legal expenses to pay, as well as a requirement to publish text from the court ruling as a public apology in a Greek newspaper with a fine of €200 for every day of delay.

Georgiou sought a court injunction to prevent enforcement of this ruling while he pursued an appeal. That appeal is set to be heard by the Greek Supreme Court this month.

Rights and Values

A positive outcome for Georgiou in both the ECHR case and slander appeal will not mean automatic exoneration. Instead, Georgiou is fighting for the chance to be retried and hoping the trials that follow go in his favor.

This is a hope shared by his supporters, including members of the International Statistical Institute, Royal Statistical Society, and American Statistical Association, who have long called for an end to Georgiou's persecution and a full exoneration. The US State Department has also repeatedly drawn attention to Georgiou's plight in its reports on human rights practices in Greece.

However, Georgiou's concerns run deeper than his own predicament. "Official statistics, themselves, as well as human rights, are on trial," he says. "The outcome of these legal cases can influence whether or not official statisticians in Greece and the EU, and even around the world, will in the future act with professional independence and produce impartial and accurate statistics. But as these legal cases also point to breaches of human rights, such as denial of fair trial and suppression of freedom of expression, the outcome of these cases also has sobering implications for human rights in the EU and worldwide." ■

Q&A with Rochelle Tractenberg

One of the world's leading experts on the practice of ethics, statistician and Georgetown University professor Rochelle Tractenberg has written two books, *Ethical Practice of Statistics and Data Science* and *Ethical Reasoning for a Data-Centered World*. These companion volumes are the first and only books to be based on, and provide guidance for using, the American Statistical Association and Association of Computing Machinery's ethical guidelines/code of ethics.

We wanted to find out more about the author and these publications, so we asked her the following questions.

Who is the audience for these books?

There are three audiences, really.

1. Instructors in any quantitative course (*Ethical Reasoning for a Data-Centered World*) in/for any field, including philosophy, business, and computer science, or instructors of courses in which the students are closer to actually practicing (*Ethical Practice of Statistics and Data Science*).
2. Self-directed learners in any field data is used (e.g., students taking an intro to stats or intro to data science course)
3. Practitioners who find themselves using data and/or statistical practices and want to assure themselves or others that they practice ethically. This group could include managers or supervisors of teams that use data, statistics, or data science.

The books feature ethical reasoning as a paradigm, which can be used at any point in a career, with *any* ethical code/conduct or principles. The books are intended to support, and could also be used to teach, ethical engagement in any discipline in which data, data science, and statistics are used.

Why are these books important?

These books are important for the following three reasons:

1. Neither the ASA nor the ACM have effectively disseminated their ethical standards of practice, although both assert (within their standards) the ethical guidance is intended for *all* who use their disciplinary tools and techniques. The books make these guidance documents accessible using authentic tasks (*Ethical Reasoning for a Data-Centered World*) and cases (*Ethical Practice of Statistics and Data Science*) so readers can learn about and practice reasoning with the ethical standards.
2. *Ethical Reasoning for a Data-Centered World* is intended for every person who uses statistics and data science—or deals with data—so the ASA and ACM objectives that everyone who uses statistical practices and computing can do so ethically. Even if they only take one course in statistics or data science, readers of *Ethical Reasoning for a Data-Centered World* can also learn about their ethical obligations in an authentic way. Just because you're not a statistics or data science major, or that's not your job title or objective, does not remove your obligation to be transparent, honor and respect stakeholders and data providers, and act in a stewardly way toward the data and those who make decisions based on the data.

Ethical Practice of Statistics and Data Science is intended for people who are practicing or are close to becoming independent practitioners. The main difference between the books is that in *Ethical Reasoning*

for a Data-Centered World, the bulk of the book (Section 2) is dedicated to learning how to work with data in an ethical way—what the ethical practice standards say about doing the job ethically. By contrast, the bulk of *Ethical Practice of Statistics and Data Science* (Section 3) is on actual cases. Having had experience working with others is important background for the 47 case analyses in *Ethical Practice of Statistics and Data Science*. So, rather than having one book for every reader/user of statistics and data science, there are two—and they are complementary if readers move from learning to work ethically with data (*Ethical Reasoning for a Data-Centered World*) to learning to work ethically *with people and* data (*Ethical Practice of Statistics and Data Science*).

3. These are actually the first books to feature these guidelines to promote ethical practice of statistics and data science. Not only are they fully current, they are also inclusive of checklists and practice standards. There are many discussion opportunities for students, instructors, and practitioners, which I hope end up being useful.

In cases where people are required to learn about "responsible conduct of research," it is better to learn how to reason and follow coherent practice standards than it is to learn about abstract concepts like "paternalism" or "autonomy"—without having those clearly linked to your actual statistics and data science practice. Modern applications of statistics and data science "in research" require a great deal more attention to what constitutes ethical statistics and data science than is currently given in typical bioethics-oriented or machine learning/artificial intelligence–intensive "ethics" training.

Do your books provide techniques for solving specific ethical problems?

There are three main techniques presented in both books. These are useful for identifying problems, determining options, and justifying decisions relating to any kind of ethical problem that can arise in the practice of statistics and data science.

1. Consider where you are in what I call the "statistics and data science pipeline." If you recognize what tasks you are doing, it makes it simpler to identify stakeholders and applicable aspects of the ethical practice standards. Both books are organized along this pipeline.

2. Examine the effects of your choices on stakeholders in your decision-making. *Ethical Practice of Statistics and Data Science* in particular, with its 47 cases, features a stakeholder analysis in every case analysis. Examining all or just one stakeholder analysis can make it clear that a) harms and benefits are not exchangeable; b) typically, harms to a stakeholder beyond the practitioner can be quite serious; whereas, benefits that may accrue when ethical guidelines are ignored are typically *not* impressive or important; and c) harms and benefits of ignoring ethical practice standards do not accrue equally. The public and public trust are typically

harmed by nonethical practice, and these harms can be serious (e.g., data breaches lead to degraded public trust and potential harms to the public whose data is breached). Benefits, by contrast, are typically minor (e.g., saves time).

3. Ethical reasoning helps you identify unethical behavior and choose—and justify—how to respond to it. It is recognized that just knowing about or the contents of ethical guidelines is not sufficient to make defensible decisions. These books seek to rectify that by presenting ethical reasoning as a learnable, improvable skill set. One thing I hope is made clear in all the cases is that ignoring unethical behavior, or 'doing nothing' when you are faced with unethical behavior, is *always an option* and *never an* ***ethical*** *option*. Both the ASA and ACM ethical practice standards are clear about this.

Why is it important to learn how to reason ethically, rather than memorize ethical practice standards?

There are three primary reasons for learning to reason ethically rather than memorizing standards:

1. Knowing how to reason ethically is something you can learn, improve, and apply to any set of rules or guidelines. This is quite different from knowing what the rules are, although knowing the ethical guidelines (or workplace policy) is the first step in the process of ethical reasoning—establishing the knowledge that is prerequisite for figuring out what is going on and what to do about it.

2. The 2022 ASA Ethical Guidelines for Statistical Practice has 72 elements. Memorizing them would be … challenging. Rather, being familiar with the eight organizing principles and knowing there is a 12-item appendix, plus knowing the process of ethical reasoning, would be a lot simpler and is probably a more achievable/realistic goal for more people. You can apply ethical reasoning in any situation or context, including statistics and data science, so it's just more efficient to learn how to reason ethically than to memorize the guidelines.

3. The ASA Ethical Guidelines for Statistical Practice is reviewed periodically and quinquennially since 2016. The 2022 revisions reflect the results from the first of these quinquennial reviews. Since the world is changing, ethical practice standards must also change, if needed, to reflect current/modern practice. Memorizing them each time they're revised could be confusing. Also, if you're teaching statistics/statistical practice, the students or mentees you have one year could learn one set of guidance while the next year (or later) they learn a different set. This is true for formal and informal teaching (e.g., learning on the job). To understand and reflect on the dynamic nature of statistics and data science, it is important to recognize how the ethical practice standards may also change over time. Committing them to memory each time is less efficient than learning how to use them (at any time/in any version) in an argument or to determine and then justify a course of action.

It should be noted that the effort you invest in learning to reason ethically and becoming familiar with what constitutes ethical statistics and data science practice is authentic to work in the domain. While exploring interesting "ethical dilemmas" such as self-driving cars and how artificial intelligence identifies criminal activities is engaging, those are a) specific cases without much generalizability and b) not related to the day-to-day activities of statistics and data science, *all of which* need to be done ethically.

What role does ethical reasoning play in the development and support of professionalism?

This is a great question. Like the ethical practice standards, people studying biostatistics, statistics, and data science are unlikely to get much instruction about a professional identity, either. Merriam-Webster defines "professionalism" as "the conduct, aims, or qualities that characterize or mark a profession or a professional person," which are externally observable.

In their 2002 *Focus on Health Professional Education* article, "Clinical Reasoning and Self-Directed Learning: Key Dimensions in Professional Education and Professional Socialisation," M. Paterson, J. Higgs, S. Wilcox, and M.

Villenuve define professional identity as "… the sense of being a professional … the use of professional judgment and reasoning … critical self-evaluation and self-directed learning …," which is internal, not as externally observable.

Research done on physical therapists learning their profession presented in the 2012 *Asia-Pacific Journal of Cooperative Education* article, "Role of Work-Integrated Learning in Developing Professionalism and Professional Identity," noted, "Professional identity formation means becoming aware of … what values and interests shape decision-making." This definition includes an internal (becoming aware) and external (values and interests in decision-making) element. The books definitely aim for the latter, with ethical reasoning plus the ethical practice standards. You don't have to be in the major or have that job title to have a sense of doing your job that includes statistics and data science in an ethical and professional manner.

I would argue that the ASA Ethical Guidelines for Statistical Practice (and ACM Code of Ethics), given their origins with experienced practitioners and their general support for any kind of practice with statistics (ASA) and computing (ACM), represent the "values and interests" that shape decision-making by ethical practitioners in statistics and data science. Transparency, refusal to generate results simply because they're asked or pressured to do so, and demonstrating respect for the rights and wishes of data contributors—all of which are key features across multiple ASA ethical guideline principles—should characterize the professional identity of anyone who works with data, even if their job title or degree (or both) are something other than "statistician" or "data scientist."

Additionally, I would say a person who is asked (or told) to memorize the ASA Ethical Guidelines for Statistical Practice is less likely to feel like a member of the profession that engages in ethical statistics and data science, and a person who learns to reason with the ASA ethical guidelines is more likely to feel like a member. They will certainly know how to use those guidelines in a professional setting, and they might be a great person to confer with in case you ever run into an ethical challenge you're unsure about how to address.

Also, it's worth reiterating that if you use computing, statistics, or both, you have ethical obligations to do so in accordance with *their* ethical practice standards, even if your professional identity is "scientist." If your scientific discipline does not specify it is unethical to mislead readers with your statistics analysis or report—and few do—the ASA Ethical Guidelines for Statistical Practice actually specify this (C2). If you're using statistics to get your science or its reporting done, you should follow the ASA ethical guidelines to ensure you're using statistical practices ethically. When you don't, you may be contributing to the reproducibility crisis going on in science right now.

How can a client know they are working with an ethically trained statistician or data scientist?

There is probably a lot of confusion about what would qualify someone as being ethically trained in any field. I personally have completed the bioethics training—same content every three years since about 1994—none of which *relates in any way* to being transparent and stewardly with statistics or data science. There is no way this training could plausibly be considered ethical training for statistics and data science. However, since this type of bioethics-based training is federally mandated for scientists who work with human subjects and research that is federally funded (like I do), it does in at least one sense make me ethically trained.

So, the first way to know you're working with someone who is actually ethically trained in statistics or data science is to confirm they have done something *beyond* the mandated US training in responsible conduct of research. Specifically, training having to do in some sense with the ethical use of statistics and data science.

This is not to say, nor to suggest, that statisticians and data scientists who haven't done extra training beyond what is required at work are not ethical. That is not my point at all. This question is about identifying an "ethically trained statistician or data scientist," and I'm promising that anyone who completes US-based training for responsible conduct of research does not meet the criterion, because the training is simply neither

designed nor intended to support ethical practice of statistics or data science.

The 2018 National Academies report on the undergraduate data science curriculum suggests "ethics" should be integrated throughout the data science curriculum. However, would a curriculum that requires students to memorize the ASA Ethical Guidelines for Statistical Practice turn out "ethically trained" practitioners? I would argue not. In fact, in their book *Ethics and Science*, Adam Briggle and Carl Mitcham state, "*Ethics is the effort to guide one's conduct with careful reasoning*. One cannot simply claim 'X is wrong.' Rather, one needs to claim 'X is wrong because (fill in the blank).'" So, here is an extreme example of a practitioner recognizing a request created an ethical problem and using the ethical guidelines to explain exactly why they could not comply with that request:

> **Client:** "Have you ever used the ASA or ACM ethical practice standards to guide your decision-making?"
>
> **Statistician or Data Scientist:** "Yes, one time <someone asked me to cherry pick some results> and I said, 'Sorry, that's against ASA ethical guidelines A2, A4, B2, C2, E3, E4, and H2, and it also makes you <or the boss> violate G1 and G5.' Then, I noticed the request violated appendix items 1, 4, 8, and 9."

That would be evidence they're an ethical practitioner, whether or not they received formal training!

The ASA Professional Statistician Accreditation (PStat®) requires that an applicant "… affirms intent to uphold the ASA's Ethical Guidelines for Statistical Practice." So theoretically, each PStat-accredited statistician would be someone who, if not 'ethically trained,' is committed to upholding the ASA Ethical Guidelines for Statistical Practice.

My hope is that these books, whether they're used to teach courses or they're used by self-directed learners and practitioners, will lead to a much larger group of people who can state they have used the ethical practice standards to "guide their conduct with careful reasoning." Once you complete a course in which the guidelines, and reasoning with them, are featured—taught and learned—you would be able to see in the transcript that the person was "trained in ethical statistics (and/or data science)." I think "trained in ethical practice" is a lot clearer and a far easier criterion to meet than "ethically trained."

What prompted you to write these books?

As an academic, I became interested in 2009 when the National Institutes of Health issued NOT-OD-10-019, "Update on the Requirement for Instruction in the Responsible Conduct of Research." This update includes the statement, "Responsible conduct of research is defined as the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research."

What struck me about the update are 1) its implication that only people who are being trained to do research are required to get training in ethical (research) practices and 2) its reliance on "established professional norms" without specifying that if your profession is something like clinician, for example, that profession's norms are unlikely to sufficiently describe ethical *statistical practices* in cases where statistical practices are not generally part of your profession. [As an aside, the update also suggested I, as a statistician, should be trained to follow the NIH's ethical recommendations *instead of the ASA's* when I do statistical research if it is federally funded and involves humans!]

I was on my institution's task force for responding to the update. The person sitting next to me at the first task force meeting (an ethicist and microbiologist) and I started exploring the relevance of the ethical reasoning paradigm for meeting—and often exceeding as it turned out—the NIH's targeted learning.

I was appointed to the ASA Committee on Professional Ethics in 2013 and became the vice chair, chairing the first working group on revising the ASA Ethical Guidelines for Statistical Practice (originally approved in 1995). Recognizing the critical role of statistics and data science in *reproducible* biomedical research—and how the NIH policy excluded emphasis on ethical statistics and data science content—drove me to work on getting the ethical reasoning paradigm to be more widely shared.

Working on the ASA ethical guidelines and their revisions led me to recognize the committee faces an uphill battle when meeting its charges to a) "sensitize members of ASA to the ethical issues in statistical practice and in other fields in which statistics is used" and b) to "… promulgate … the set of ASA Ethical Guidelines that describes the general view of ethics in statistical practice." To me, ethical reasoning plus the guidelines helps the committee meet both charges.

I had a sabbatical in 2019, so both books were drafted during that time. Both books include a map so two cases can be shown

to reflect each of the 2022 NIH "responsible conduct of research" topics. Using these books, individuals can learn to use statistics and data science ethically [whether or not it is for human subjects/federally-funded research], while also fulfilling the NIH mandate for their particular topical training, if that is a requirement.

Is there anything you would like to share that we haven't asked you about?

One question I kind of expected was along the lines of, "How can anyone be expected to squeeze a new course—much less two—on ethical practice into an already-crowded curriculum?" This is one reason I wanted to make sure the books are accessible to any practitioner, as well as to instructors and self-directed learners. I don't expect programs or instructors to prioritize ethical practice or reasoning over learning the discipline itself. What I hope will happen, and is already happening, is that programs will see these books as auxiliary texts, with ideas about and opportunities to reflect on ethical dimensions of practice throughout all the courses in a statistics or data science program.

We don't expect all instructors to know about all the methods their program teaches, but it seems more reasonable to expect people teaching about statistics—whatever the method/course—be knowledgeable about how to do their specialty method ethically. If students are asked to use the same two books throughout their course of study, they will learn to reason ethically with any material, and they will learn how to do everything the program is established to teach them in an ethical way.

I recognize this could require a massive, coordinated effort. Some programs are contemplating doing this at the same time they are planning to create or revise a statistics and data science program. If anyone does do this, I hope they will share their struggles and successes with the rest of the community.

Something else I note when I'm discussing the books or ethical reasoning for statistics and data science is that the statistics and data science pipeline (plan/design, collect/munge/wrangle data, analysis—run or program to run, interpret, document your work, report and communicate, and work on a team) identifies as many as seven distinct opportunities to disrupt an overall unethical practice or norm. For example, the Cambridge Analytica scandal could have been interrupted by anyone engaging in one or all of these tasks.

Are you familiar with any places a statistician or data scientist can ask for help from a colleague when confronted with an ethical issue?

What a great question! The short answer is the colleague. All the cases (seven in *Ethical Reasoning for a Data-Centered World* and 47 in *Ethical Practice of Statistics and Data Science*) discuss how and when to confer with a colleague or peer. One of the important aspects of the books is to help familiarize readers with both the ethical practice standards—which are important for having any kind of discussion about what to do when confronted with an ethical issue—and what options or next steps are feasible.

Ethical reasoning applied to a case (or event) will encourage practitioners to collect the information they have in an organized way. This alone can help them feel more confident that they have identified an ethical issue. If you work somewhere with an ombudsman or you feel comfortable going to your supervisor, having a sort of write-up of the problem will definitely help you initiate the conversation.

Ethical Practice of Statistics and Data Science discusses role playing as a way to get yourself more familiar with the kind of conversations with colleagues you might have. The person you discuss the situation with doesn't have to be an ethicist, just someone who is willing to read the ethical practice standard (ASA or ACM) or your workplace policies carefully and thoughtfully.

My ultimate hope for these books is that, as a result of reading and working through the examples, readers will *be* those colleagues who are able to provide a careful and thoughtful conversation.

One of my favorite quotes about instruction in ethical practice comes from Michael Kalichman in the report of a National Academy of Engineering meeting: "… (t)he entire community of scientists and engineers benefits from diverse, ongoing options to engage in conversations about the ethical dimensions of research and (practice)." I hope the books help create those options and to motivate practitioners in statistics and data science to engage in these conversations and learn to see themselves as those colleagues to whom others can turn to for help identifying and responding to ethical challenges at work.

Get Started

Download the ASA Ethical Guidelines for Statistical Practice from *bit.ly/3PEOU1R* and the Association for Computing Machinery Code of Ethics and Professional Conduct from *bit.ly/3FUjtgO.* ■

MORE ONLINE
Learn about Rochelle Tractenberg and her books at *ethicalreasoning.org*.

UConn Sports Analytics Symposium Boasts New Features

Data Challenge and Conference Support from NSF

Jun Yan, University of Connecticut

Meredith Wills with the SportsMedia Technology data challenge finalists. From left: Cameron Grove, Durham University (UK); Jack Rogers, University of Minnesota; Kai Franke, University of Minnesota; Jackson Balch, University of Minnesota; Isaac Blumhoefer, University of Minnesota; Cale Williams, Georgia Institute of Technology; Ethan Rendon, New York University; Jack Weyer, University of Southern California; Billy Fryer, North Carolina State University; and Meredith J. Wills, SportsMedia Technology

The fourth UConn Sports Analytics Symposium was held October 8, 2022, in McHugh Hall at the University of Connecticut, Storrs. The event, hosted by the UConn Statistical Data Science Lab, attracted about 90 in-person and 170 virtual participants. A majority of the virtual participants registered through the symposium's international partnership in China, and more than half of the registrants were graduate or undergraduate students.

There were two new features this year. First, a data challenge was sponsored by SportsMedia Technology, an industry leader in sports data collection and visualization. The goal of the challenge was to analyze an aspect of player movement (e.g., baserunning, movement while fielding, backing up a play) for minor league baseball players using in-game player and ball location data for multiple teams over multiple seasons. The data was provided by SportsMedia Technology, and the organization committee was chaired by Brian Macdonald of Yale University.

Two live coding sessions were held last summer, with 39 individuals/teams submitting entries. The judging committee, chaired by Meredith Wills of SportsMedia Technology, was an elite team consisting of sports analysts from both academia and industry, as well as players, umpires, and scouts. Six finalists presented their work in a poster session, with the following two students winning:

- **Graduate:** Cameron Grove, Durham University (UK), "To Shift or Not to Shift? Using Player and Ball Motion Data to Build a Highly Flexible Defensive Positioning Algorithm in Baseball"
- **Undergraduate:** Billy Fryer, North Carolina State University, "Should I Stay or Should I Go?"

Greg Matthew congratulates poster award winner Shinpei Nakamura Sakai.

The second new feature was that the symposium was supported by a three-year conference grant from the National Science Foundation. The proposal was titled "Conference: UConn Sports Analytics Symposium: Engaging Students into Data Science." The principal investigator was Jun Yan, and the co-principal investigators were Laura Burton, Kun Chen, Robert Huggins, and Elizabeth Schifano. The grant supports travel expenses for student presenters and invited speakers. This year, 12 out-of-state students were given awards to travel to UConn to present their posters, including the six data challenge finalists.

The symposium started with a brief overview of the event by Yan. Welcoming remarks were delivered by UConn President Radenka Maric, NSF Program Director of the Division of Mathematical Sciences Edsel Peña, and UConn Field Hockey Head Coach Paul Caddy. The morning keynote, "Software Engineering for Sports Analytics," was given by Tegan Ashby, senior full-stack developer of basketball systems at Brooklyn Nets. David Bergman, associate professor of operations and information management at UConn, presented the afternoon keynote, titled "Integration of Analytics Techniques for Algorithmic Sports Betting."

A panel discussion about sports data science competitions followed the morning keynote. It was moderated by Alison Lukan, Seattle Kraken contributor and television analyst for Root Sports. Panelists included Michael Lopez, senior director of football data and analytics at the National Football League; Brendan Kumagai, data science intern at Zelus Analytics; Megan Risdal, lead product manager at Kaggle; and Asmae Toumi, director of analytics and research at PursueCare. Kumagai and Toumi were winners of the NFL Big Data Bowl in 2022 and 2021, respectively.

The poster session was held in person. Sixteen posters were on display and judged by a committee chaired by Brian Macdonald and consisting of Sean Ahmed of the Pittsburgh Pirates, Chris Harden of ESPN, Ethan Meyers of Yale University, Elizabeth Schifano of UConn, and Bob Wooster of Yale University. The Student Poster Award went to Shinpei Nakamura Sakai of Yale University for "Estimating Conditional Average Treatment Effects for Player Performance Over Time: Assessing Load-Management in Sports."

Six training workshops in three 50-minute parallel sessions were well attended. The instructors included five undergraduate and one graduate student from UConn. The introductory-level workshops were "Introduction to R" by Fusheng Yang and "Introduction to Python" by Charitarth Chugh. The intermediate-level workshops were "Hockey Analytics" by Venkata Patchigolla and "Baseball Analytics" by Patrick Cummins. The advanced-level workshops were "Web Scrapping for Sports Data" by Hari Patchigolla and "TensorFlow in Sports Analytics" by Pranav Tavildar. All the training materials are archived in public GitHub repositories linked to from *https://statds.org/events/ucsas2022/workshops.html*.

For more information about the symposium, visit *https://statds.org/events/ucsas2022/program.html*. Questions or ideas for future symposiums may be sent to Yan at *jun.yan@uconn.edu*. ■

The International Association of Survey Statisticians prize committee awarded the first Hukum Chandra Memorial Prize to professor **Mahmoud Torabi** of the University of Manitoba for his *Journal of the Royal Statistical Society: Series B* paper, "SUMCA: Simple, Unified, Monte Carlo–Assisted Approach to Second-Order Unbiased MSPE Estimation," which can be found at *bit.ly/3PqBYfS*.

Torabi was invited to present a special webinar, titled "Small Area Estimation: A Novel Approach on Estimation of Mean Squared Prediction Error of Small-Area Predictors," which featured nearly 100 participants. To watch the recorded webinar, visit *vimeo.com/765870800*. Slides are available at *http://isi-iass.org/home/webinars*.

The Hukum Chandra memorial prize is awarded to a person who has made an important contribution to research areas of Hukum Chandra's work, namely survey sampling, small area estimation, official statistics, spatial analysis applied to official and survey statistics, and agricultural statistics. The award is offered every other year and is open to applicants from all regions of the world. ■

G. David Williamson is the recipient of the 2022 Michael H. Kutner Award for Distinguished Service to the Discipline.

Williamson earned his PhD in biostatistics from Emory University in 1987. His dissertation adviser was Michael Haber.

He is an accomplished leader and adviser who has

G. David Williamson

made exceptional statistical contributions throughout his 35 years of service at the US Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry.

Currently, he serves as a primary scientific adviser and associate director for science at the National Center for Environmental Health and Agency for Toxic Substances and Disease Registry, providing direction for and leadership in developing and implementing the scientific research agenda and facilitating high-quality scientific products in compliance with agency procedures. Outside the federal government, Williamson has been an active member of the American Statistical Association, becoming a fellow in 2004. He has chaired several ASA committees, including the Joint Statistical Meetings Program Committee in 2000, Waller Education Award Committee in 2009, and Karl E. Peace Award Committee in 2014. In 2019, as ASA vice president, he chaired the Professional Issues and Visibility Council that looked at the impact of statistics on society. He currently serves on advisory boards for the Georgia Institute of Technology and Georgia Southern University and is an adjunct professor at Georgia Southern University and Emory University. ■

OBITUARIES

David Tim Holt

Former president of the Royal Statistical Society, Tim Holt passed away on November 15, 2022.

Tim was president of the society from 2005 to 2007, and the theme of his presidential address was "public confidence in the official statistics system and its relationship to evidence-based public policy." Tim became an RSS fellow in 1977, was a member of council from 1987 to 1991 and 2000 to 2009, and was joint editor of the *Journal of the Royal Statistical Society, Series A*, from 1991 to 1993.

Tim had a long and distinguished career in official statistics, beginning in 1970 at Statistics Canada. He returned to the United Kingdom in 1973 to take up a lectureship at the University of Southampton. He was later appointed Leverhulme Professor of Social Statistics, a post he held from 1980 to 1995, and was deputy vice chancellor from 1990 to 1995.

Tim was an important academic social statistician whose research and teaching influenced many people across the world. In 1995, Tim led the merger of the Central Statistical Office and Office of Population Censuses and Surveys to form the Office for National Statistics, providing a more integrated and comprehensive service to government and the wider community. He was therefore in the unique position of being the last director of the CSO and the first director of the ONS and ex officio registrar general.

On his retirement from the ONS in 2000, Tim was made Companion of the Order of the Bath. He then returned to a chair in social statistics at the University of Southampton, later to become emeritus professor.

After retiring from Southampton, he continued to be active within official statistics through consultancy work and activities such as chairing the UNSC friends of chair meetings on statistical indicators and the RSS National Statistics Working Party. Former RSS President Denise Lievesley said, "Tim had a solid core of integrity. He cared deeply about what was right. He was a really nice person, exceptionally kind, never pushy, always listening to what one had to say, and lovely company in an understated way."

A full obituary will be published in a forthcoming edition of the *Journal of the Royal Statistical Society, Series A.*

Joseph Massaro

Debbie Cheng, Boston University School of Public Healthi

Joseph Massaro, a biostatistics professor at the Boston University School of Public Health, died October 19 surrounded by his loving family. He was 58.

Joseph completed a bachelor's of science in mathematics from Boston College in 1985 and a PhD in mathematics/statistics at Boston University in 1994. He joined the faculty of the Boston University School of Public Health Department of Biostatistics in 1998 and worked as a senior statistician on the Framingham Heart Study, assessing risk factors for cardiovascular disease and dementia. He was heavily engaged in the design and analysis of clinical trials with numerous device, pharmaceutical, and biotechnology organizations across the globe. He was also managing director of biostatistics and data management at the Harvard Clinical Research Institute.

Joe was a dedicated teacher who shepherded hundreds of students through Applied Statistical Methods in Clinical Trials I and II, winning several teaching awards in the process.

Professor of biostatistics and associate dean of education Lisa Sullivan, whose friendship and professional collaboration with Joe began in the mid-1980s, remembered him as "an incredibly dedicated" teacher and scholar whose passion for his field was an inspiration to all. "He changed lives, but never took any credit. He supported colleagues, but always under the radar. I feel so privileged to have known Joe and to be part of his amazing life," said Sullivan, a graduate school classmate.

Kimberly Dukes, associate professor of biostatistics and executive director of the Biostatistics and Epidemiology Data Analytics Center at the Boston University School of Public Health, first met Joe in 1987 when both were graduate students. Joe had a "magnificent brain," Dukes said, and a knack for teaching that made him able to "communicate hard concepts

succinctly to his clients, colleagues, and students."

Dukes and Joe were also colleagues at Quintiles, a large biopharmaceutical research contractor that is now IQVIA. Joe was an ideal colleague and collaborator with a gift for dealing with people as adeptly as he handled numbers. Said Dukes, "Professionally, he was on top, integrating kindness and humor into every situation, leaving you feeling like you couldn't wait until the next encounter."

Over the past several weeks, friends, colleagues, and family members shared stories about "how wonderful and unique Joe was, telling stories that made you laugh and cry," Dukes said. "He made everything better, and I feel privileged that I was part of his life." Joe was an incredible scholar, teacher, and colleague.

Joe loved his family and is survived by his wife, Monica, also a statistician, and their two beautiful daughters, Anna and Karina.

There are no words to appropriately express the void left by Joe, yet all remain grateful for having had the opportunity to work alongside him.

Memorial contributions may be made to a fund set up by the Boston University School of Public Health to support Anna and Karina's education, something that was incredibly important to Joe, at *https://gofund.me/c575e453*.

How Can We Help?

We want to help you share your own news with colleagues and showcase your latest successes.

It is important to us that everyone knows about your research, recent awards, and promotions!

If you have any news you would like to share, email *megan@amstat.org*.

Gertrude M. Cox Scholarship

Applications are being accepted for the Gertrude M. Cox Scholarship until February 23. This scholarship was established to encourage women to enter statistically oriented professions.

Application is limited to female permanent residents of the United States or Canada who are admitted to full-time study in a graduate statistics program by July 1 of the award year.

The award will be presented at the Joint Statistical Meetings.

The scholarship is sponsored by the ASA Committee on Women in Statistics and Caucus for Women in Statistics. Learn more and download an application packet at *bit.ly/3BvRdOU*. ■

Ellis R. Ott Scholarship

The Statistics Division of the American Society for Quality has $7,500 scholarships available to support students enrolled in, or accepted into, a master's degree or higher program with a concentration in applied statistics, statistical engineering, and/or quality management. This includes the theory and application of statistical inference, statistical decision-making, experimental design, analysis and interpretation of data, statistical process control, quality control, quality assurance, quality improvement, quality management, and related fields. The emphasis is on applications as opposed to theory. Studies must take place at US or Canadian institutions. Online and in-class programs are included.

Scholarships totaling more than $360,000 have been awarded to 62 deserving students.

Qualified applicants must have graduated in good academic standing in any field of undergraduate study. Scholarship awards are based on demonstrated ability, academic achievement, industrial and teaching experience, involvement in student or professional organizations, faculty recommendations, and career objectives.

Application instructions and forms should be downloaded from *bit.ly/3Ykskzv*. The deadline for applications is April 1.

For more information, contact Lynne B. Hare at *lynne.hare@comcast.net.*

More Online

This year's scholarship winners are Therese Azevedo and Ann Marie Weideman. Learn more about them at *bit.ly/3YksW8h*. ■

New Grants to Fund Faculty Research

The American Mathematical Society and Simons Foundation recently created a program to foster and support research by mathematicians at primarily undergraduate institutions. Each year for three years, awardees will receive $3,000 to support research-related activities. In addition, the awardee's institution will receive $300 for administrative costs and the awardee's department will receive $300 in discretionary funds annually for three years.

"Faculty at all types of institutions actively engage in mathematics research, and modest amounts of grant funding can have an outsized effect on the success of a project," said Bryna Kra, incoming AMS president. "I'm excited to see the AMS partner with the Simons Foundation to support the research of mathematicians at primarily undergraduate institutions with the creation of flexible grants funding visits for collaborations, conference travel, and other research-related expenses."

Starting this year, the AMS expects to award at least 40 grants annually. Funds for the first round of grants will be disbursed in July. Tenured and tenure-track mathematicians with an active research program who have earned a PhD degree at least five years before the start of the grant are eligible to apply.

"Impactful mathematics research is being conducted by faculty at primarily undergraduate institutions across the country, and the AMS is so pleased that the Simons Foundation is supporting this work," said Catherine Roberts, AMS executive director.

Applications can be found at *mathprograms.org* and are due by March 20.

For more information, visit *bit.ly/3VPd77X* or email *ams-simons@ams.org*. ■

Waller Awards

The Waller Awards were established by a contribution from retired ASA Executive Director Ray Waller and his wife, Carolyn. The Waller Education Award honors individuals for innovation in the instruction of elementary statistics. The Waller Distinguished Teaching Career Award recognizes an individual for sustained excellence in teaching and statistics education. Recipients for each award are presented with a certificate and $1,000.

Selection Criteria

Waller Education Award

Nominees should be early in their career, with 10 or fewer years of full-time teaching, and have the responsibility of teaching the first course in statistics in a two- or four-year college or research university.

Waller Distinguished Teaching Career Award

Nominees must have 20 or more years of statistics teaching experience.

Nominations are due February 15. For submission requirements and a list of past winners, visit *www.amstat.org/your-career/awards/waller-awards*. ■

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

AWARD	DEADLINE	QUESTIONS & NOMINATIONS
Gottfried E. Noether Awards	January 15	*awards@amstat.org*
Bob Riffenburgh Award	January 15	*awards@amstat.org*
Karl E. Peace Award	February 1	*awards@amstat.org*
W.J. Dixon Award for Excellence in Statistical Consulting	February 15	*awards@amstat.org*
Harry V. Roberts Statistical Advocate of the Year Award	February 15	*awards@amstat.org*
Waller Awards	February 15	*awards@amstat.org*
Samuel S. Wilks Memorial Award	February 15	*awards@amstat.org*
W.J. Youden Award in Interlaboratory Testing	February 15	*awards@amstat.org*
Statistics in Physical Engineering Sciences Award	February 20	*awards@amstat.org*
Gertrude M. Cox Scholarship	February 23	*awards@amstat.org*
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*
Dorothy Marie Lamb and Annette Lila Ryne Memorial Scholarship	July 15	*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*

Columbia University
Department of Statistics

Founder's Postdoctoral Fellowship in Statistics Starting Fall 2023

Position Description: The Department of Statistics invites applications for the 2023 Founder's Postdoctoral Fellowship in Statistics at Columbia University. This fellowship seeks to bring exceptional scientists of outstanding potential to Columbia University. This two-year fellowship, with no teaching obligations, is to begin between July and September 2023. The Fellow will hold the rank of postdoctoral research scientist in the Department of Statistics. A competitive annual salary will be supplemented with generous funding for conference travel and research support.

Applications in all areas of statistics and probability will be considered: the primary selection criterion will be the candidates' exceptional promise to produce high quality and visible research. Candidates must have a PhD in statistics or related field by the date of appointment. Fellows will be expected to pursue a vigorous research agenda and to participate actively in the intellectual life of the Department.

The Department currently consists of 38 faculty members and 55 PhD students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who, through their research, teaching and/or service, will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: http://www.stat.columbia.edu

Qualifications: PhD in statistics or related field by the date of appointment

Application Instructions: All applications must be submitted through Columbia's online Academic Search and Recruiting portal (ASR). apply.interfolio.com/115316

The application must include the following:

- A cover letter that explains your motivation for applying for this position and indicates your choice of mentors from the statistics faculty.
- A curriculum vitae (including a list of publications)
- A brief research statement that summarizes current research interests, past accomplishments, and future research goals. It should contain a short proposal for the research activities you plan to conduct while at Columbia.
- The names of 3 references—references will be asked to upload letters of recommendation in ASR.

Review of applications begins on January 13, 2023, and will continue until the position is filled.

Inquiries may be made to dk@stat.columbia.edu.

Salary range: $60,000-$100,000

The salary of the finalist selected for this role will be set based on a variety of factors, including but not limited to departmental budgets, qualifications, experience, education, licenses, specialty, and training. The above hiring range represents the University's good faith and reasonable estimate of the range of possible compensation at the time of posting.

Equal Employment Opportunity Statement:
Columbia University is an Equal Opportunity Employer / Disability / Veteran.

Professional Opportunity listings may not exceed 65 words, plus equal opportunity information. The deadline for their receipt is the 20th of the month two months prior to when the ad is to be published (e.g., May 20 for the July issue). Ads will be published in the next available issue following receipt.

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

Employers are expected to acknowledge all responses resulting from publication of their ads. Personnel advertising is accepted with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual orientation.

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

Indiana

■ Non-tenure-track lecturer positions, Department of Statistics, Indiana University Bloomington (*www.stat.indiana.edu*). Teach 5 courses per year and cooperatively manage large enrollment, multi-section courses. PhD in statistics or related field and commitment to teaching excellence and to proven effective teaching and learning strategies required. Apply by January 15, 2023 at: *http://indiana.peopleadmin.com/postings/14904.* Address questions to Kelly Hanna, *khanna@indiana.edu*.

New Jersey

■ DIMACS, the Center for Discrete Mathematics and Theoretical Computer Science, based at Rutgers University in New Brunswick, New Jersey, USA, seeks a Deputy Director of the Center who would also serve as an Associate or Full Professor in computer science, mathematics, statistics, or another Rutgers department. Fostering diversity and inclusion is part of DIMACS's culture and mission. Go to *https://go.rutgers.edu/dimacsdeputy* for application instructions. ■

Clinical Assistant Professor/Lecturer Position in the Department of Biostatistics

The Department of Biostatistics at the University of Michigan invites applications for the position of Clinical Assistant Professor or Lecturer to begin Fall 2023. This is a non-tenure track faculty position with a twelve or nine-month appointment, depending on rank, and an initial term of three years with the possibility of renewal. You will report to the Department Chair. The position is primarily an online teaching position with additional in-person residential teaching and mentoring. Rank will be commensurate with qualifications and experience.

The Department of Biostatistics currently has 43 primary faculty members, 172 full-time Master's students, and 105 PhD students. The Department is involved in cutting edge methodological research and scientific investigation in many areas of public health and biomedical research. The Department has close ties with the Department of Statistics, the Institute for Social Research, the Medical School, the Michigan Institute for Data Science, the Institute of Health Policy and Innovation, the University of Michigan Rogel Cancer Center, and other research groups across campus. In addition, the Center for Statistical Genetics within the department includes faculty and students from around the campus and is home to the NHGRI-funded University of Michigan Genome Science Training Program. We are seeking an experienced and dynamic candidate with a commitment to contributing a diverse, equitable, and inclusive environment for all members of our community.

The University of Michigan offers competitive salaries and excellent benefits. Ann Arbor is a progressive city of about 120,000 year-round residents and approximately 44,000 students, with excellent schools and a wide variety of sporting and musical activities. It is rated very highly in national surveys for its quality of life and has the amenities of a city many times its size.

The University of Michigan is an affirmative action/equal opportunity employer. Applications from women and minorities are welcomed and strongly encouraged. Applications will be evaluated when received, although priority will be given to applications received before January 1, 2023. Salary is commensurate with qualifications and experience.

How to Apply
Interested applicants should visit *https://sph.umich.edu/biostat/faculty-search/* to apply.

Applicants should submit the following:

- Cover Letter
- Curriculum Vitae
- Teaching Statement including experience, philosophy and commitment to Diversity, Equity, and Inclusion (DEI)
- Graduate school transcript (for terminal degree within the last five years)
- Recent course syllabi and teaching evaluations (if available, no more than three)
- A research statement if applying for the clinical assistant professor position
- Contact information for up to three individuals willing to supply recommendation letters in relation to teaching ability

Course/Program Descriptions
The Population and Health Sciences online Master of Public Health and Master of Science curriculum offers students and working professionals a world-class public health training, with the flexibility of an online program. Currently, this program has 100+ Master's students. Michigan Public Health has partnered with Coursera, one of the largest online education platforms, to offer these degrees. The program includes a core introductory Biostatistics course and an elective series in Analyzing Health Data consisting of five additional Biostatistics courses: Introduction to R, Applied Regression, Design of Health Studies, Applied Generalized Linear Models, and Applied Longitudinal Data Analysis using R. The Department of Biostatistics also has a new Master's program in Health Data Science. The successful applicant will have the opportunity to teach courses in this new program.

Responsibilities
The successful applicant will teach online Biostatistics courses offered through the Population and Health Sciences master's degree program at the University of Michigan School of Public Health. The specific number of courses will depend upon the semester. The successful applicant will design weekly evening virtual sessions for each course that complement existing video lectures. The virtual sessions should be interactive in nature and apply the concepts covered in the video lectures. In addition, the successful applicant will hold virtual office hours, write and grade quizzes, exams, homework assignments and projects. In addition, the successful applicant will work closely with school-level administration to support planning and admissions for the online program. The successful applicant will also teach residential students in the Master's of Health Data Science/Master's of Biostatistics programs and will be involved with organizing professional development for our MS students and mentoring. A research program is also required of the clinical assistant professor position.

Required Qualifications

- PhD in Biostatistics or Statistics (or near completion) or MS with significant teaching experience
- Demonstrated excellence in independent teaching to undergraduate and/or graduate students
- Demonstrated excellence in independent research (clinical assistant professor only)
- Knowledge of Excel and the R statistical programming language
- Desired Qualifications
- Experience in online learning, particularly the Coursera platform
- Familiarity with interactive teaching techniques
- Prior experience with course development
- Professional experience to provide career advising and mentoring for Biostatistics graduate students

Questions or Concerns:
Please contact the University of Michigan Department of Biostatistics at *UM.Biostat.Recruitment@umich.edu* for inquiries related to the position.

U-M COVID-19 Vaccination Policy: COVID-19 vaccinations are now required for all University of Michigan students, faculty and staff across all three campuses, including Michigan Medicine, by the start of the Fall semester on August 30, 2021. This includes those working or learning remotely. More information on this policy is available on the Campus Blueprint website *https://healthresponse.umich.edu/policies-guidance/vaccine* or the U-M Dearborn and U-M Flint websites.

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professional opportunities

This month's Top 10 is the 'Top Ten **Team Mascots We Would Love to See**.'

Amstat News continues its hilarious offering by ASA Executive Director Ron Wasserstein of a special Top 10 that aired during a recent edition of the *Practical Significance* podcast.

Wasserstein explains, "As the 2022 World Series came to an end with the Astros defeating the Phillies, I started thinking about team mascot names. I reached out to two statisticians who also happen to be dear friends, Tom Loughin at Simon Fraser University and John Boyer, retired from Kansas State, who years ago came up with some extraordinarily 'punny' ideas for mascots. So, courtesy of Tom and John, here are the 'Top Ten Team Mascots We Would Love to See.'"

Wasserstein

10

From northwest Minnesota, you could have the ***Perham Mutations.***

09

From the Caribbean, ***St. Maarten Gales.*** (Sorry folks, that's the last of the statistics ones.)

08

Western Australia could be the home of the ***Perth Snatchers.***

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

07

Egypt could bring us the ***Cairo Tractors.***

06

From the horn of Africa, it's the ***Djibouti Shakers.***

05

Not terribly far from there, you might find the ***Khartoum Characters.***

04

Georgia could bring us the ***Macon Whoopees.***

03

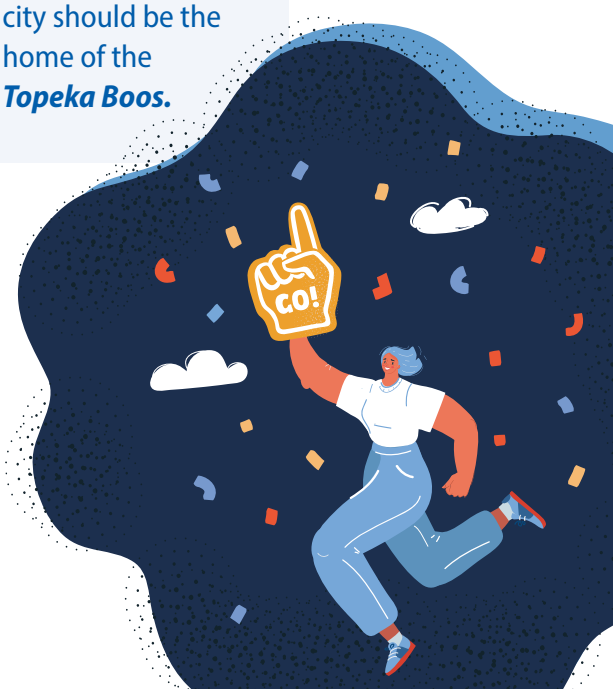
While South Carolina would bring the ***Aiken Hearts.***

02

My longtime home city should be the home of the ***Topeka Boos.***

#01

And the number one team mascot we would love to see: From New York, the ***Schenectady Dots.***



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Key Dates for Attendees

May 1, 2023 (11:00 am ET)
Registration and Housing Open

May 31, 2023
Early Registration Deadline

June 1 – June 29, 2023
Regular Registration

June 30 – August 10, 2023
Late Registration

July 6, 2023
Housing Deadline

Key Dates for Participants

December 1, 2022 – February 1, 2023
General Abstract Submission

January 25 – April 5, 2023
Meeting and Event Request Submission

February 1 – April 17, 2023
Late-Breaking Session Proposal Submission

May 31, 2023
Draft Manuscript Deadline

August 5-10
2023 JOINT STATISTICAL MEETINGS
Toronto, ON, Canada
ww2.amstat.org/meetings/jsm/2023