

July 2020 • Issue #517

AMSTATNEWS

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THE PANDEMIC JSM



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AMSTATNEWS

JULY 2020 • ISSUE #517

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American Statistical Association



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.

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Don't Eat Grandpa: Tips for Writing Well in a Nonacademic Setting

STATtr@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.

- 22 **STATS4GOOD**
JSM 2020—Everyone Counts: Data for the Public Good

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.



Virtual Networking Session Mentor Sign-Up

The ASA Committee on Career Development and ASA GivesBack 2020 are hosting a guided virtual networking social for students and early-career statisticians July 30 from 6–8 p.m. We are seeking mid- to late-career professionals from all areas (academia, industry, and government) to attend the 1.5-hour session and provide students and early-career statisticians opportunities to practice virtual networking.

For more information and a tentative outline, visit bit.ly/3ecB1Ey.

CORRECTION

Mousumi Banerjee's name was inadvertently left out of the COV-IND-19 Study Group in the May issue article, "ASA Members Show Leadership During COVID-19 Crisis." We regret the error.

Make the most of your ASA membership

Visit the ASA Members Only site: www.amstat.org/membersonly.

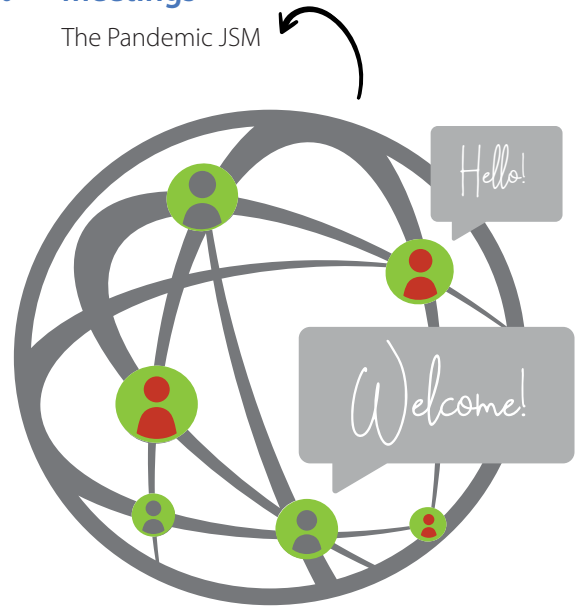
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JSM 2020

VIRTUAL CONFERENCE

Virtual Reality

I'm a history buff, so, when I learned JSM 2020 would be virtual, I immediately started to think about other JSM history and trivia. In 1940, the world was ravaged by WWII, and two JSMs were canceled because of transportation issues and other considerations. Thus, there were no conferences in 1942 and 1943. Statisticians came together again in 1944 when the ASA President's Address was, for the first time, delivered by a woman—Helen M. Walker—who also happens to have been the first female ASA president. At JSM 2019, the ASA was represented—again for the first time—by three women presidents: Lisa LaVange; Karen Kafadar; and me.

We are again facing a global crisis because of COVID-19, which is affecting how we will come together this summer. Although we will only be able to connect with each other virtually, I am looking forward to our first virtual JSM. We have the opportunity to do some unique and creative things by going virtual, besides keeping everyone safe. In this month's corner, I want to share some of the activities I'm most excited about.

One of the duties of the ASA president is to select an invited speaker for JSM. Of all the decisions I have made during my term as president, this was by far the easiest. I wanted my colleague Erica Groshen, who served as commissioner of the Bureau of Labor Statistics (BLS), to be my invited speaker. I am grateful Erica agreed and am looking forward to her talk—What Is the Future of Official Statistics?—August 3 at 3:00 p.m. ET.

During her tenure at BLS, Erica proved to be an exceptional and thoughtful leader, so I know her

talk will be filled with insights. She probably does not know this, but she has been a role model for me as a leader, which makes her participation even more meaningful to me. I'm also happy to have her honored in another way this year by being recognized as a new fellow of the ASA.

When I look at the JSM program, I am filled with pride and amazement at the scope of the contributions to science and society made by our community. One of the benefits of the virtual program is I will be able to see many more presentations, since the session recordings will be available until the end of August and I won't have to make the difficult choice of which sessions to attend. Of course, I will participate in many sessions during the week, including Clinical Visual Analytics: Past, Present, and the Future, which I had the privilege of organizing with the support of my colleagues in the Section on Graphics and the History of Statistics Special Interest Group.

Of all the events at JSM, the one I will miss the most is the opportunity to introduce and congratulate the newly elected ASA Fellows. The challenges of the past few months have been substantial, but reviewing the accomplishments of these talented members of our community makes me optimistic about our future. Since we will not be able to greet each other on the stage, I would like to ask you to share selfies of yourself and your family celebrating your achievement. Use the hashtags #ASAFellow and #JSM2020 so we can have a virtual recognition ceremony.

We are also planning a virtual walk/run challenge. Beginning August 2 and concluding



Wendy Martinez



ASA Fellows, post a photo of yourself and your family on Twitter, Instagram, or Facebook. Use the **#ASAFellow** and **#JSM2020** tags. Share them with **@AmstatNews** so we can celebrate together!

View the 2020 ASA Fellows announcement at bit.ly/37y3X7q.

August 6, there will be daily walk/run tasks. Besides getting your workout in, you will have the opportunity to win prizes. So, lace up your shoes and watch for more information about how to sign up. I promise the challenges will have a statistical flair!

Now back to being a history buff, which means I love trivia. We are going to have a JSM trivia contest, and we need your help. Please use the form at bit.ly/3hr9sZD to submit JSM trivia—serious, funny, or both. We will use your submissions to create the questions for our contest. I already have some great trivia questions after working on my address. Yes, it will have elements of history and statistics!

One positive aspect of a virtual JSM is I do not have to give my talk in person, live, and on the stage. Plus, the talk is always given late in the evening on the Tuesday of JSM after several days of sessions and meetings, and it's past my usual bedtime. So, one benefit this year is I can record my talk ahead of time, leaving me “stress free” and able to sit back and enjoy virtual JSM. I am sure many of you can come up with more reasons why it is good I'm giving a virtual recorded talk, and we are asking you to submit them to us. Please enter your hopefully funny, but not required, reasons for why

a virtual recorded talk is better than an in-person one at bit.ly/2YBOWxw. The top 5–10 reasons (as determined by ASA staff) will be announced each day prior to JSM, and winners will receive a prize (thanks to an anonymous donor).

SDSS 2020

The ASA Symposium on Data Science and Statistics (bit.ly/3e3I6ao) is taking place as I write this column (with a lot of help from Donna LaLonde). I believe this is the first major virtual conference the ASA has organized, and I have to tell you it is fantastic. If this is an indication of how JSM will go this year, then I can only say it will be well worth your time.

I am attending sessions at SDSS and am impressed by how smoothly it's going. We can see the speaker and slides via live streaming. There is a chat box for attendees to exchange comments and to say hi, along with a box for entering questions to be asked of the speakers. All of this will be available at virtual JSM (depending on the type of session), along with a virtual exhibit hall, mentoring conversations and activities, poster sessions, and much more. Kudos to SDSS 2020 Program Chair Dave Hunter, the SDSS program committee, speakers, attendees, and ASA staff (especially Naomi Friedman).

After having the privilege of chairing several sessions at SDSS (including a panel discussion), I know the ASA staff will ensure our JSM experience is one for the history books! So, I encourage all members, colleagues, and friends to be creative for this meeting, have some fun, learn something new, connect with others, enjoy yourselves, and make some wonderful memories.

A Note from the ASA Presidents

Editor's Note: The following letter was sent to ASA members June 10, 2020, on the day of #ShutdownSTEM and #ShutdownAcademia.

Dear Colleagues,

We, the three elected presidents of the American Statistical Association (ASA), are deeply moved by the tragedies and social upheaval that have unfolded in the past few weeks. As felt by many of you, we too are angered, anguished, and wearied as new names are added to the dreadful roll call of black individuals slain, harmed, or threatened by law enforcement or by vigilantes. As allies, we stand with African Americans and other communities of color as we work to overcome systemic racism in America. And we acknowledge that all institutions are imperfect and need reforms that eradicate racism in operations, policies, and structure.

These reforms should start at home, here within the ASA and the broader statistics and data science communities. For that reason, we especially are grateful for the many discussions and recommendations shared via social media, email, and ASA discussion boards. We are compiling recommendations here (bit.ly/3d50u1p).

However, we immediately make the following pledge:

- We will critically reappraise and work to improve the effectiveness of our efforts to be a more diverse and inclusive community.
- We will identify resources to help the persons and organizations within our professional community learn and grow their level of cultural competence.
- We will work with the ASA Board of Directors to develop a plan to help members of our professional community become better statisticians and citizens of our communities through a deeper understanding of our own inherent biases.
- We will be transparent in sharing the diversity and inclusion issues identified within our organization, as well as the solutions implemented.

- We will create and maintain communications channels to facilitate public commentary to help us identify the opportunities for improvement with respect to diversity and inclusion within the ASA and the broader statistics and data science communities.

To help fulfill these pledges, we are creating an anti-racism task force that will be co-chaired by the chair of the ASA Committee on Minorities in Statistics and include some of its members plus other people we will appoint.

Please help us learn from you:

- Tell us how the ASA can improve itself and our community by better addressing systemic racism and hindering biases of any kind. Provide confidential or public suggestions (bit.ly/37xt9eb).
- Share with us your experiences. Our email addresses are listed by our signatures at the bottom of this message. We also plan to host a virtual town hall meeting for individuals to share their experiences and recommendations.
- Volunteer to be involved (bit.ly/2YCTf5b).

Today, Wednesday, June 10, 2020, we join with the global community by observing #ShutDownSTEM and #ShutDownAcademia.

We are taking time for reflection on how systemic racism and unconscious bias damages our personal and professional lives and, more broadly, the statistics and data science communities. With your help, we hope to strengthen our professional community by making it more just, equitable, diverse, and inclusive.

Sincerely,

Wendy Martinez, President
wendyasa2020@gmail.com

Rob Santos, President-Elect
robapresident2021@gmail.com

Karen Kafadar, Past President
kkiustat@gmail.com



Katherine Ensor Elected 2022 ASA President

Matilde Sanchez-Kam to
Be Vice President

Katherine (Kathy) Ensor, Noah G. Harding Professor of Statistics in the George R. Brown School of Engineering at Rice University, has been elected the 117th president of the American Statistical Association. She will serve a one-year term as president-elect beginning January 1, 2021; her term as president becomes effective January 1, 2022.

The ASA membership also elected Matilde Sanchez-Kam, associate director of analytics and informatics in the Office of Biostatistics of the Center for Drug Evaluation and Research at the US Food and Drug Administration, ASA vice president. Sanchez-Kam's term begins January 1, 2021.

Ensor said one of her major goals as president is to advance the ASA's data science footprint. "Data science methods integrate the best of statistical thinking and practice," she said, noting that many universities are already investing in their statistics departments to build top data science

programs. "ASA has an opportunity to work with university leaders to articulate the value statisticians bring to their strategic leadership table," Ensor said.

Another area of focus for Ensor will be growing urban analytics, a field that combines statistics, local governments, and "data for good." "Our urban environments generate massive amounts of geo-referenced data, allowing us to draw insights on how we work, live, play, and learn within our communities," Ensor said. "Urban analytics requires our best statistical science coupled with a willingness to engage local governments, NGOs, and communities to improve quality of life." Ensor said she would like to see the ASA foster collaborations between ASA members and their local communities.

Leadership has been a consistent theme in Ensor's career. At Rice University, she serves as director for the Center for Computational Finance and Economic Systems and also oversees development of the Kinder

Institute Urban Data Platform, a computing platform and data repository for the greater Houston area. She served as chair of the department of statistics from 1999 through 2013. Ensor looks forward to advancing the ASA's Leadership Institute, which was established in 2018 and provides training and opportunities for ASA members to develop their leadership skills.

Ensor's professional service spans many areas, including serving on the board of directors of the National Science Foundation Institute on Pure and Applied Mathematics, as a member of the National Academies Committee on Applied and Theoretical Statistics, as vice president of the ASA from 2016 to 2018, and as elected representative to numerous ASA sections and councils.

Ensor earned her doctorate in statistics from Texas A&M University and her master's in mathematics and bachelors of science in education from Arkansas State University. She was elected fellow of the American

Association for the Advancement of Science in 2013 and an ASA Fellow in 2000.

Sanchez-Kam begins her tenure as ASA vice president after more than 20 years of active service to the ASA. She first became a member as a Penn State graduate student in 1993 and has held numerous positions within the ASA since then, including chair of the biopharmaceutical section, chair of the statistical consulting section, and both president and vice president of the New Jersey Chapter.

Since 2018, Sanchez-Kam has been an associate director of analytics and informatics for the Office of Biostatistics at the US Food and Drug Administration. Prior to that, she held positions in industry, including nine years as vice president of biostatistics and data management at Arena Pharmaceuticals and 11 years as director of clinical biostatistics and research decision science at Merck Research Laboratories.

Sanchez-Kam earned her bachelor's in statistics from the University of the Philippines at Los Banos, a master's in statistics and operations research from Penn State, and a PhD in statistics from Penn State.

The ASA membership also elected the following:

- Alexandra Hanlon, Director, Center for Biostatistics and Health Science at Virginia Tech, as the Council of Chapters Representative to the ASA Board
- Kate Calder, Professor, Department of Statistics and Data Sciences at The University of Texas at Austin, as the Council of Sections Representative to the ASA Board
- Bin Nan, Professor of Statistics, University of California at Irvine, as

Publications Representative to the ASA Board

- Jeffrey Dawson, Associate Dean for Faculty Affairs, College of Public Health, University of Iowa, as Chair-elect of the Council of Chapters Governing Board
- Jason Roy, Chair of Biostatistics and Epidemiology, School of Public Health, Rutgers University, as Chair-elect of the Council of Sections Governing Board

The entire slate of election results, including officers for each of the ASA's 27 sections, follows:

Section on Bayesian Statistical Science (SBSS)

Chair-Elect 2021

Amy Herring

Program Chair-Elect 2021

Veronica Berrocal

Secretary/Treasurer 2021–2022

Adrian Dobra

Biometrics Section (BIOM)

Chair-Elect 2021

Sebastien Haneuse

Secretary/Treasurer 2021–2022

Xian Jin Xie

Council of Sections Representative 2021–2023

Briana Stephenson

Biopharmaceutical Section (BIOP)

Chair-Elect 2021

Alan Hartford

Program Chair-Elect 2021

Freda Cooner

Secretary 2021–2023

Inna Perevozskaya

Council of Sections Representative 2021–2023

Mark Levenson

Business and Economic Statistics Section (BE)

Chair-Elect 2021

Erica Groshen

Program Chair-Elect 2021

Tyler McCormick

Secretary/Treasurer 2021–2022

Daniel Kowal

Section on Statistical Computing (COMP)

Chair-Elect 2021

Jun Yan

Program Chair-Elect 2021

Linglong Kong

Council of Sections Representative 2021–2023

Samantha Tynes

Section on Statistical Consulting (CNSL)

Chair-Elect 2021

Xiaoyue Maggie Niu

Publications Officer 2021–2022

Edward L. Boone

Council of Sections Representative 2021–2023

Naomi Brownstein

Executive Committee at Large 2021–2023

Robert Podolsky

Section on Statistics and Data Science Education (EDUC)

Chair-Elect 2021

Rebecca Nugent

Council of Sections Representative 2021–2023

Kumer Das

Executive Committee at Large 2021–2023 (two positions)

Alison Gibbs

Executive Committee at Large 2021–2023 (two positions)

Chris Malone

Section on Statistics in Defense and National Security (SDNS)

Chair-Elect 2021

Karl Pazdernik

Program Chair-Elect 2021

Justin T. Newcomer

Publications Officer 2021–2022

Sarah Elise Roberts

Section on Statistics and the Environment (ENVR)

Chair-Elect 2021

Elizabeth Mannshardt

Program Chair-Elect 2021

Emily L. Kang

Treasurer 2021

Katie Banner

Council of Sections Representative 2021–2023

Debashis Mondal

Section on Statistics in Epidemiology (EPI)

Chair-Elect 2021
Michael Daniels

Program Chair-Elect 2021
Bo Lu

Council of Sections Representative
2021–2023
Doug Landsittel

Section on Statistics in Genomics and Genetics (SGG)

Chair-Elect 2021
Michael Wu

Program Chair-Elect 2021
Lin Chen

Council of Sections Representative
2021–2023
Iuliana Ionita-Laza

Government Statistics Section (GOVT)

Chair-Elect 2021
Simone Gray

Program Chair-Elect 2021
Stephen Campbell

Secretary/Treasurer 2021–2022
Emily Molfino

Publications Officer 2021–2022
Kathi Irvine

Section on Statistical Graphics (GRPH)

Chair-Elect 2021
Ed Mulrow

Program Chair-Elect 2021
Carson Sievert

Secretary/Treasurer 2021–2022
Natasha Sabr

Health Policy Statistics Section (HPSS)

Chair-Elect 2021
Yuanjia Wang

Section on Statistics in Imaging (SI)

Chair-Elect 2021
Ciprian Crainiceanu

Program Chair-Elect 2021
Simon Vandekar

Council of Sections Representative
2021–2023
Elizabeth Sweeney

Section on Statistical Learning and Data Science (SLDM)

Chair-Elect 2021
Ali Shojaie

Program Chair-Elect 2021
Glen Wright Colopy

Lifetime Data Science Section (LIDS)

Chair-Elect 2021
Douglas Schaubel

Program Chair-Elect 2021
Jing Ning

Treasurer 2021–2023
Yu Cheng

Section on Statistics in Marketing (MKTG)

Chair-Elect 2021
Alan Montgomery

Program Chair-Elect 2021
Liye Ma

Secretary/Publications Officer
2021–2022
Alice Li

Section on Medical Devices and Diagnostics (MDD)

Chair-Elect 2021
Norberto Pantoja-Galicia

Program Chair-Elect 2021
Tracy Bergemann

Mental Health Statistics Section (MHS)

Chair-Elect 2021
Pilar Lim

Program Chair-Elect 2021
Alessandro De Nadai

Section on Nonparametric Statistics (NPAR)

Chair-Elect 2021
Lan Wang

Program Chair-Elect 2021
Yichao Wu

Treasurer 2021
Howard D. Bondell

Publications Officer 2021–2022
Lingzhou Xue

Section on Physical and Engineering Sciences (SPES)

Chair-Elect 2021
Lulu Kang

Program Chair-Elect 2021
Jonathan Stallrich

Section for Statistical Programmers and Analysts (SSPA)

Chair-Elect 2021
Whitney Worley

Program Chair-Elect 2021
Gabriel Odom

Quality and Productivity Section (QP)

Chair-Elect 2021
Ximwei Deng

Program Chair-Elect 2021
Lisa M. Moore

Section on Risk Analysis (RISK)

Chair-Elect 2021
Indranil Ghosh

Program Chair-Elect 2021
Alexander Alekseyenko

Council of Sections Representative
2021–2023
Chris Sroka

Social Statistics Section (SOC)

Chair-Elect 2021
Aleksandra (Sesa) Slavkovic

Program Chair-Elect 2021
Elena Erosheva

Publications Officer 2021–2022
Quentin Brummet

Section on Statistics in Sports (SIS)

Chair-Elect 2021
Paul Sabin

Program Chair-Elect 2021
Benjamin S. Baumer

Council of Sections
Representative 2021–2023
Sarah Morris

Survey Research Methods Section (SRMS)

Chair-Elect 2021
Jean Opsomer

Program Chair-Elect 2021
Jana Asher

Treasurer 2020–2021
Jessica Kohlschmidt

Publications Officer 2021–2022
Dan Liao

Council of Sections Representative
2021–2023
Sias Kolenikov

Education Officer 2021–2022
Daniell Toth

Section on Teaching of Statistics in the Health Sciences (TSHS)

Chair-Elect 2021
Jacqueline Milton ■

ASA Members Lead at Los Alamos

Amstat News regularly profiles government statisticians. For this issue, we feature two leaders from the statistics group at Los Alamos National Laboratory (LANL). Kary Myers is the current group co-lead. Joanne Wendelberger started at LANL in 1992 and has been project leader, deputy group leader, group leader, and acting deputy division leader. She recently returned to full-time technical work as a senior-level scientist.



Joanne R. Wendelberger

has been a statistician at Los Alamos National Laboratory since 1992. She holds a bachelor's degree in mathematics and economics from Oberlin College and master's and PhD degrees in statistics from the University of Wisconsin-Madison. Her research interests include design and analysis of experiments, statistical intervals, errors and uncertainty, analysis and visualization of large-scale simulations, and education modeling. She has been active in ASA chapters and sections, conference organization, and editorial service. Wendelberger is a fellow of the American Statistical Association and a recipient of the American Society for Quality William G. Hunter Award.

Please tell us about your work at LANL, including how you came to work at LANL, the positions held there, and your prior training.

After completing my master's degree, I worked as a statistical consultant at General Motors Research Laboratories. Exposure to a variety of statistical problems arising in automotive applications motivated me to return to Wisconsin, where I completed my PhD in statistics working with George Box. While working on my dissertation, I saw an ad in *Amstat News* for a statistician at Los Alamos National Laboratory. I wasn't really looking for jobs yet, but the position looked like a unique professional opportunity located in the mountains of Northern New Mexico. I decided to take a leap and have remained at LANL for 28 years as a technical staff member, project leader, deputy group leader, group leader, acting deputy division leader, and senior-level scientist.

What do you like most about working as a statistician at LANL? What's most challenging? What work/accomplishments are you most proud of?

The LANL Statistical Sciences Group develops and applies statistical methods motivated by interdisciplinary challenges. I enjoy working in collaboration with amazing colleagues in statistics and other fields. Having a group of about 30 statisticians means there is always someone

down the hall to help bounce ideas around. Some of my most impactful work has resulted from analysis and visualization of large-scale simulation models and design and analysis of aging experiments for materials and components. My greatest personal satisfaction has come from serving as group leader of the LANL Statistical Sciences Group, where I could support my fellow group members in their technical endeavors and careers. One of the projects I am most proud of is a current collaboration with researchers at The University of Texas at Austin on an educational research project focused on understanding factors that influence success in pursuing STEM degrees and careers.

What advice would you offer younger statisticians and students who might be interested in working for the government?

There are abundant opportunities for statisticians to contribute statistical skills to different types of statistical problems and applications in the government sector. Working in government provides opportunities to contribute to issues that affect people in many ways. Look beyond the immediate tasks and see how you can connect to broader efforts and longer-term opportunities. I have always advised students and early-career statisticians that a job is what you make it and to think about your job not just as a job but as part of a lifelong career. I

have found that being involved in the ASA and other professional societies has benefitted my career immensely. In particular, I encourage statisticians to get involved in sections and interest groups that can provide a technical/professional focus, networking opportunities, ongoing learning, and other benefits.

How has your statistical work changed over your tenure with LANL, and where do you see statistical work heading in an era of machine learning, AI, and data science?

After progressing from purely technical roles to a series of R&D leadership roles, I transitioned back to full-time technical work with the perspectives of both a researcher and a manager. I have witnessed a change over time from small focused projects to larger, more complex challenges. I see a trend toward more integrated approaches to problem solving with increasing interaction across both the scientific components and the different aspects of data collection and analysis. I currently serve as the analysis lead for an analytics project at LANL where operational data streams are integrated into a variety of analyses to support data-informed decision-making. I see statistics continuing to provide a rigorous foundation for many of the methods used in machine learning, AI, and data science, as well as a structured approach to uncertainty, while other disciplines bring additional concepts and tools for analysis, computation, and efficient work flows.

Please tell us about your personal interests and hobbies.

I enjoy daily opportunities for exercise—including walking, hiking, and swimming—that help me immensely both physically and mentally. I find that cooking

provides endless opportunities for creativity and experimentation that draw upon my statistical background and knowledge. I have traveled extensively with destinations providing cultural experiences, adventure, and the opportunity to help others, including Mount Kilimanjaro, the Himalayas, Mount Fuji, the Galapagos Islands, and Cameroon. Most of all, I enjoy spending time with my family, including my husband and fellow statistician, Jim, whom I met in graduate school; my three daughters, Barbara, Beth, and Laura—two of whom are statisticians; and my granddaughter, Genevieve. JSM has been a professional and family destination for decades!

.....

Please tell us about the Statistical Sciences Group at Los Alamos National Laboratory and the projects you work on.

Our group has almost 30 scientists—I love saying “I’m a scientist!”—most with a PhD in statistics. We’re very much an applied group, by which I mean our work typically starts with a consequential scientific challenge, such as predicting the impact of hurricanes on the power grid, estimating the chemical composition of rocks on Mars, forecasting COVID-19 cases and deaths, or evaluating the state of the nuclear stockpile. We then explore the data sets—ranging from massive to meager—that we can use to address that challenge, and we determine what methods will be appropriate. We’re extremely data driven, whether those data are experimental or simulated or just what our collaborators have lying around. Sometimes, standard methods will do the trick—it’s surprising how far linear regression can get you—but our data violate model assumptions a lot, so we

make modifications or develop new approaches.

Tell us about your training and career path before arriving at Los Alamos.

I started my career at Carnegie Mellon, where I earned my undergraduate degree in statistics with a minor in computer science. That’s when I began doing collaborative, interdisciplinary research, including working with a team of statisticians, computer scientists, and astrophysicists to study the Sloan Digital Sky Survey. The faculty recruited me to join a new joint PhD program between the statistics department and what later became the world’s first machine learning department. After winning a fellowship from AT&T Labs to support six years of graduate work, I did summer internships in AT&T’s artificial intelligence department, their machine learning department, and then at a machine learning startup. For my PhD thesis, I worked with large data sets to combine video of the surface of a brain with physiological measurements like blood pressure and heart rate. Knowing I didn’t want a career in academia, I applied to become a scientist at Los Alamos instead.

What do you like most about working as a statistician at Los Alamos? What’s most challenging?

In the best jobs, you work on projects you’re excited about with people you enjoy being around, and I get both here. We tackle amazing problems with some of the top scientists and best computing resources in the world. The people in our group are always keen to hear about your work and help you brainstorm ways of approaching your latest challenge. I often say that when someone hires one of us to work



Kary Myers is a scientist and deputy group leader in the Statistical Sciences Group at Los Alamos National Laboratory. At Los Alamos, she has been involved with a range of data-intensive projects, from examining electromagnetic measurements to aiding large-scale computer simulations to developing analyses for chemical spectra from the Mars Science Laboratory Curiosity Rover. She is an ASA Fellow and has served as an associate editor for the *Annals of Applied Statistics* and *Journal of Quantitative Analysis in Sports*. She created and organizes CoDA, the Conference on Data Analysis, to showcase data-driven research across the Department of Energy.

on their project, they're actually gaining the expertise of our entire group.

The group has several definitions of success. We value publishing and proposal writing but don't require either. Some people are entrepreneurial about creating opportunities to pursue the work they want to do. Others are tremendous at lending their statistical knowledge to support some of the most critical missions in the nation. The challenge lies in ensuring that such a diverse group can thrive.

Tell us about your position as leader of the Statistical Sciences Group at Los Alamos National Laboratory. What about this position appealed to you, and what are your priorities for the next few years?

I'm our deputy group leader, which means I help with everything from hiring decisions to student programs to sharing our group's accomplishments with a larger audience. I'm also still a scientist and have several technical leadership roles, including guiding teams studying Mars or nuclear reactors.

I've enjoyed this role because I get to support and showcase so many smart people working on such a wide range of projects and initiatives. It also has enabled me to continue growing CoDA, the Conference on Data Analysis, a biennial event that Earl Lawrence and I founded in 2012 to feature data-driven research across the Department of Energy.

Over the next few years, I'd like to expand and formalize our academic connections—including having faculty visit for a week or a summer or a year—and continuing to engage with students through internships or by providing challenging data for their thesis work.

What makes someone a good candidate to work in your group or at another national lab as a statistician?

We love to see people who have worked collaboratively on applied problems and made the effort to know the subject matter as much as the statistical methods. If you've worked with a variety of challenging data sets and can articulate what made them challenging and how that steered your methodology decisions, you'll

fit in well. Computing skills will help you stand out as a strong candidate, whether that's developing an R package or deploying your analyses on a supercomputer. And being able to communicate your work—both the application area and your methodology—to a smart audience that doesn't have your expertise will make you a coveted collaborator.

To join our group at Los Alamos, you'll need to be able to obtain a Department of Energy security clearance that usually requires US citizenship. Some national labs have more flexible citizenship requirements than we do, so check each job posting for details.

How does one find out about opportunities for internships and employment at LANL?

We are hiring, pandemic or no pandemic! And this summer, we're learning how to do our interviews online, instead of onsite. To see the job posting for our scientist positions and learn more about our group, visit stat.lanl.gov.

If you're thinking about an internship, contact people in our group who are working on topics that interest you. The staff profiles at stat.lanl.gov are a good place to start, as is browsing our Google Scholar pages to see what we're publishing. Many of our current group members started out as summer interns, so I encourage you to talk with them to learn more about their experiences and to hear about beautiful northern New Mexico! ■

A Glimpse into the CDC's Innovation, Technology, and Analytics Task Force

Amanda Malloy, ASA Director of Development



Stephanie Dietz of the CDC Innovation, Technology, and Analytics Task Force

The Centers for Disease Control and Prevention (CDC) has been mentioned or referenced almost daily since the COVID-19 outbreak. Local and state governments, the White House, business owners, and the general public depend on the data, analysis, and guidelines recommended by the CDC to make important decisions. However, not everyone knows how complicated it is to collect, clean, and analyze the data related to the pandemic and communicate it in a way that is easy to understand.

There are statisticians working tirelessly to wrangle and analyze data and come up with innovative data visualizations anyone can understand. That's not an easy task! Therefore, when I was given the opportunity to talk to Stephanie Dietz, a statistician at the CDC who is part of the Innovation, Technology, and Analytics Task Force (currently focused on COVID-19), I jumped at the chance.

Following is a bit of my interview with her (edited slightly for clarity):

How did you end up on the CDC's COVID-19 data analysis team?

In my normal job, I work in the Division of Laboratory Systems (DLS) as a statistician, analyzing national laboratory test result data. At the beginning of March, another division in our center, the Division of Health Information Systems (DHIS), started the process of receiving SARS-CoV-2 laboratory data orders and results from commercial laboratories. The technical complexities of this task required a collaboration between DHIS and DLS. As a result, staff from DHIS and DLS were deployed to the CDC Data and Analytics Task Force and I was asked to co-lead the effort of validating the commercial laboratory data for CDC.

What work is the data analysis team responsible for? What is your part?

We are responsible for the commercial laboratory data orders and results being sent to CDC from six commercial laboratories. I am the commercial laboratory data co-lead, and we oversee a team of analysts working to validate and stand up these new data streams. We're getting all coronavirus-related laboratory tests, regardless of result outcome or type of test, from six commercial laboratories.

We are also responsible for reporting on the data daily and working with other statisticians and analysts to incorporate the data into other reports and models. Our daily reports on the data and the work we're doing with other statisticians and analysts to incorporate the data into other reports and models are being used by CDC and HHS leadership to inform decision-making. Laboratory data testing reports can also be seen on the CDC website.

What does your typical workday look like?

I am working from home now. We have daily stand-ups and meetings, which were already in place prior to the response and working from home. The hardest part of my day is working with a toddler knocking on my office door! While I miss asking my colleagues to come over and look at my screen, I am so impressed with the technology and innovation available to get our jobs done.

I don't currently have a "typical" workday. Every day has been

varied and different, with unique and unexpected challenges. It can range from technical issues to fun analytic questions to requests with very quick turn-arounds. I used to joke that there was no such thing as a statistical emergency, but this response has turned that on its head.

What are some of the major technical challenges facing you and the team? For example, is your technical workflow challenging?

Our biggest challenge is data formatting. As I'm sure most ASA members know, data cleaning and validation is often the hardest and longest part of any analytic process. We are receiving hundreds of thousands of records from multiple sources, each with slightly different formats. However, we have an outstanding team of statisticians, database managers, program coordinators, and administrative staff that have found quick, accurate, and creative solutions to ensure our data stay flowing and timely.

What are some things you find yourself doing/thinking/saying that you never thought you would?

I, for one, never thought I'd consider going to a drive through to pick up dinner a major outing or have happy hour by Zoom. I also never thought I'd have to teach preschool and second grade at the same time. I can honestly say I never thought I would find myself apologizing to senior leadership at the CDC for my toddler making a cameo appearance on our video conference call. ■

ASA Releases Statement on Government Data Experts

The American Statistical Association released the following statement recently on the role of data experts in state and local governments during the COVID-19 pandemic. The statement has been sent to US state governors and public health officials.

Government officials face challenging decisions during this COVID-19 pandemic. To make good decisions, policymakers need timely, accurate, and clear reports based on the best available data and science. Professionals in statistics, data science, epidemiology, and other fields are ideally suited to produce accurate and objective information to fuel evidence-based decision-making.

Scientific experts and policymakers best collaborate when scientists are able to apply their expertise unfettered and independent of political influence—and absent the fear of retaliation, regardless of the implications of their results on policymaking. A healthy, effective collaborative environment requires that experts provide the most objective and best possible analyses, along with their full context. This allows policymakers and decision-makers to integrate the expert analyses with other considerations to arrive at judicious decisions. The process is entirely transparent.

Decision-making breakdowns occur when these collaborations fail and transparency dissipates. For example, when data visualizations are produced without input from the experts,

errors or bias can easily appear, leading to misleading and potentially damaging public health consequences. When experts' data are taken out of their hands, their analyses politicized, or their expertise mocked—rather than valued—disinformation emerges. If experts have to fear for their livelihood when the integrity of the data and their evidence-based conclusions are challenged for purely political reasons, the entire populace suffers. When it becomes known that experts cannot freely and independently provide the best possible information and that policymakers spurn this information when making decisions, public confidence fades and public interests are endangered.

Scientists abide by high standards of conduct in their work. Statisticians, data scientists, epidemiologists, and other scientists who are members of the American Statistical Association (ASA) know to abide by professional ethical standards (www.amstat.org/ASA/Your-Career/Ethical-Guidelines-for-Statistical-Practice.aspx). These standards not only demand a high level of professional integrity from experts, but also inform those who rely on their expertise about the ethical standards on which they can depend.

The ASA urges government officials to work collaboratively with scientific experts for the good of the people they serve. Data integrity, rigorous science, and good decisions go together. We stand ready to assist officials in identifying appropriate unbiased expertise. ■



New ASA Interest Group: Text Analysis

The ASA's big tent grew bigger recently with the addition of the Text Analysis Interest Group (TAIG). The group was petitioned in the fall of 2018 and formally approved by the Council of Sections Executive Committee in March 2019.

The objectives of the interest group are as follows:

1. To bring together individuals and groups who have an active interest in text analysis, text mining, natural language processing (NLP), and related areas of research through their intersections with statistics
2. To promote research in text analysis and involve statisticians with a wide variety of backgrounds in such work
3. To promote text analysis as an integral part of modern statistics education, thereby increasing awareness of the tools and methods of text analysis in the statistical community

4. To contribute to the program of the annual Joint Statistical Meetings (JSM) and other meetings of the American Statistical Association and other professional organizations via formal representation in technical sessions and continuing education opportunities

TAIG serves as the bridge between the mainstream statistical community represented by the ASA and the growing field of text analysis, defined broadly (text mining, natural language processing, computational linguistics, web scraping, sentiment analysis, topic modeling, GAN text generation, automated translation, etc.). There has been a steady flow of presentations on text analysis and NLP at ASA conferences over the past five years. JSM, the Conference on Statistical Practice (CSP), and the Symposium on Data Science and Statistics (SDSS) have included at least a dozen presentations each year featuring text analysis methodology and/or applications.

TAIG has had a dynamic start. It held its inaugural meeting in Denver at JSM 2019, where about 30 TAIG members convened to introduce themselves and plan future work. At the meeting, the group elected Stas Kolenikov of Abt Associates as chair, recognizing his contributions to the successful launch of the group. He wrote the draft charge, set up the petition, collected the votes, and interacted with the Council of Sections throughout the group creation process.

In December of 2019, the group held an election for the first full cohort of officers. About a third of the group members voted. The 2020 elected officers for 2021 are as follows:

- Chair-Elect: Kelly H. Zou, Upjohn, Pfizer Inc.
- Program Chair-Elect: Jordan Rodu, University of Virginia
- Secretary-Treasurer: Carol Haney, Qualtrics

Looking forward to JSM 2020, TAIG will sponsor the invited session Statistics of Social Media, organized by Juha Alho of the University of Helsinki with presentations by Mike Kearney of the University of Missouri, Columbia, Emilio Zagheni of the Max Planck Institute for Demographic Research, and Alho and discussion by Frauke Kreuter of the University of Maryland.




TAIG will also sponsor of a topic-contributed panel—Big Data, Technology Platform, and Digital Innovation with Measurable Impact—organized by Zou with panelists Siddhartha Dalal of Columbia University, Joseph Imperator of Upjohn, Pfizer Inc., Kolenikov, Lourenco Miranda of Societe Generale, Mike Porath of The Mighty, and May Yamada-Lifton of SAS Institute.


As with any ASA interest group, ASA members can join TAIG for free. Currently, there are more than 170 members. To join or learn more about the group, visit <https://community.amstat.org/taig-group>. ■

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Sections and Interest Groups: A Career Development Perspective



Matthew Krachey is a data scientist at the Expedia Group working on natural language processing problems. He is the current chair of the Committee on Career Development.



Ofer Harel is a professor and the director of graduate admissions in the department of statistics at the University of Connecticut. He is chair of the ASA's Council of Sections Governing Board and a member of the Committee on Career Development. Harel is also an active member of numerous ASA sections who began his involvement when he was a junior researcher.

MORE ONLINE
For a list of section and interest group websites, visit bit.ly/2B8vQqK.

The ASA is a large and diverse organization, bringing together statisticians working in areas such as sports, health care, manufacturing, defense, and national security. Each area may make use of different methodologies and applications, so it is a good idea for all statisticians—especially those in the early phases of their careers—to join a section or interest group (IG) to develop professional skills in the areas of their interest.

Sections and IGs are subject-area and/or industry-related communities that offer avenues for personal and professional development. Membership provides opportunities to attend specialty conferences (e.g., International Conference on Health Policy Statistics), workshops (e.g., Preparing to Teach and the ASA Biopharmaceutical Section

Regulatory-Industry Statistics Workshop), short courses, webinars, and roundtables on diverse topics. Participation in these activities improves technical knowledge and helps members build connections with experts.

In addition, many sections and IGs sponsor mentoring, leadership, and networking activities that can be extremely useful for junior statisticians. Some sections have an established mentoring program around conferences, whereas others have year-round programs (<https://community.amstat.org/ccd/asamentoring>). These development opportunities can focus on technical topics or soft skills (e.g., presenting, writing, and networking). Because sections and IGs are always looking for volunteers and participants in their activities, getting involved is a great way to quickly build a professional network and develop leadership and organizational skills.

Several sections also hold or support data challenges throughout the year. Data challenges such as DataFest are supported by the ASA in general, while Data Expo Challenge is supported by the Statistical Computing and Statistical Graphics sections, for example. These challenges are opportunities to gain access to novel data sets, learn modeling and data processing methods, sharpen programming skills, and develop professional portfolios that can demonstrate aptitude and provide interesting conversation in interviews.

Currently, there are 29 sections and 10 IGs. Section membership requires an annual fee (ranging from \$5 to \$12 per year, reduced for students). Sections also have formal charters with elected chairs and other officers. ASA members are able to join a section and receive the first year of membership for free as an incentive to get involved with one. Membership in an IG is free and not restricted to ASA members.

Some of the sections and IGs are more active than others, but most have opportunities for students and early-career professionals. Several maintain websites

The ASA Committee on Career Development's (CCD) mission is to organize and promote activities, information, and materials to aid in the career development of statisticians and data scientists and to excite new interest in careers in these fields. To achieve this mission, CCD works on a variety of programs, including webinars, virtual career office hours, a networking training at JSM, a database of soft skills, and a variety of articles. You can find these materials and more at <https://community.amstat.org/ccd/home>.

with up-to-date information related to development in the research area. Some have a resources portal, and others maintain blogs. Before jumping into specific examples, here is a list of general section and IG benefits:

1. Networking with members who have similar interests
 - a. Online discussions in dedicated ASA Community groups
 - b. In-person meetings at conference mixers
 - c. Mentoring programs
2. Keeping up to date in your area
 - a. Scientific program at the Joint Statistical Meetings (JSM)
 - b. Continuing education classes, webinars, and roundtables
 - c. Information about special interest conferences
3. Other benefits
 - a. Section newsletters
 - b. Best paper and poster awards at JSM
 - c. Leadership opportunities
 - d. Sponsored awards
 - e. Student competitions

A summary of the three major activities of each section and interest group can be found at bit.ly/2NbKZub.

Whatever career stage you are in, sections and IGs provide many opportunities for finding community, networking, mentoring, and developing technical and soft skills. ■

Nominations Wanted for Norwood Award

The University of Alabama at Birmingham (UAB) School of Public Health and Department of Biostatistics request nominations for the Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences.

Eligible individuals are women who:

- Have completed their terminal degree
- Have made extraordinary contributions and have an outstanding record of service to the statistical sciences, with an emphasis on both their own scholarship and teaching and leadership of the field in general and women in particular
- Are willing to deliver a lecture at the award ceremony

How to Nominate

Send a full curriculum vitae accompanied by a letter of not more than two pages describing the nature of the candidate's contributions. Contributions may be in the area of development and evaluation of statistical methods, teaching of statistics, application of statistics, or any other activity that can arguably be said to have advanced the field of statistical science. Self-nominations are acceptable, and electronic submissions of nominations are encouraged.

Nominations should be sent to norwoodawd@uab.edu by August 17.

The winner will be announced by August 31, and the date of the lecture is October 20.

For more information, visit bit.ly/3bFqrbe. ■



JSM 2020: Opportunities for Interaction, Learning, Engagement

Arvind Rao, University of Michigan, and Xiaoyu Zhai, Facebook Artificial Intelligence Applied Research

In a historic first, JSM 2020 will be held August 2–6 virtually (i.e., in an online format) due to the ongoing COVID-19 pandemic.

Highlights include the First-Time Attendee Orientation on Sunday, August 2, at 1:30 p.m. EDT for those new to JSM. There is also the Opening Mixer at 2:00 p.m. Sunday, where you'll be shuffled into various “rooms” to meet up with longtime friends and make new ones.

The Virtual Mentoring Program will provide an opportunity for students and early-career attendees to gain advice from experienced colleagues. If you are interested in participating as a mentor or a mentee, you can complete the requisite application at <https://forms.gle/imde9zTJc9wknqiM9>.

The JSM program also consists of poster presentations, roundtable discussions, technical sessions, and countless other meetings and activities.

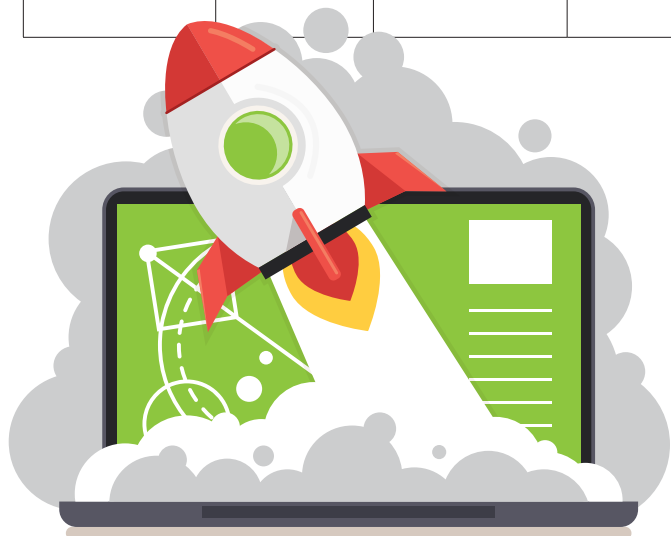
Roundtable discussions, in particular, offer conversation about topics such as ethics, mentoring, academic careers, and data science. Because they are virtual this year, they are free but require an additional registration and have limited space. It is a good idea to sign up early.

Late-breaking sessions cover one or more technical, scientific, or policy-related topics that have arisen recently. This year's topics include COVID-19, data science postsecondary education, and human trafficking.

For JSM details, visit the website at ww2.amstat.org/meetings/jsm/2020 or online program at ww2.amstat.org/meetings/jsm/2020/onlineprogram. ■

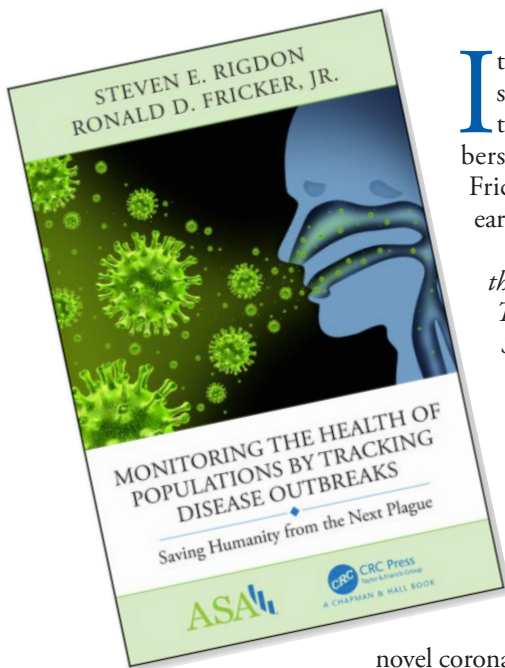
Opportunities at JSM for Applied Statisticians

Date	Day	Time	Session ID	Topic
8/2/2020	Sunday	1:30-2:30 p.m.	220109	First-Time Attendee Orientation
8/2/2020	Sunday	2:00-3:30 p.m.	220111	JSM Opening Mixer
8/3/2020	Monday	1:00-2:50 p.m.	219368	Everyone Counts in ASA: An Informational Walk Through the Organization, Activities, and Opportunities — Invited Panel
8/4/2020	Tuesday	10:00-11:50 a.m.	219547	Translational Statistics: Problems in Preclinical Studies and a Call for Change — Topic-Contributed Papers
8/4/2020	Tuesday	10:00-11:50 a.m.	219685	Sports Analytics Outside the Big Four — Topic-Contributed Papers
8/5/2020	Wednesday	10:00-11:50 a.m.	219436	Advances in the Analysis of Competing and Semi-Competing Risks Data in Medical Research — Invited Papers
8/5/2020	Wednesday	10:00-11:50 a.m.	219729	Statistical Advancements in Neurodegeneration Trial Designs and Analyses — Topic-Contributed Papers
8/5/2020	Wednesday	12:00-1:00 p.m.	375	Women in Statistics: How to Survive (and Thrive!) in Academia — Roundtable Discussion
8/6/2020	Thursday	12:00-1:00 p.m.	516	The Statistician as an Investigator and Educator, Not Just a Power Calculator on Clinical Research Protocols — Roundtable Discussion



ASA Members Stop the Presses with New Book About Disease Outbreaks

Regina Nuzzo, ASA Senior Advisor for Statistics Communication and Media Innovation



MORE ONLINE

For more information about or to buy the book, visit bit.ly/30MwnJs.

It's not often statisticians get to shout, "Stop the presses," but that's what longtime ASA members Steve Rigdon and Ronald Fricker found themselves doing earlier this year.

Just as their book, *Monitoring the Health of Populations by Tracking Disease Outbreaks: Saving Humanity from the Next Plague*—the latest in the ASA's collaborative series with CRC Press—was going to the printer in early 2020, news was emerging from China about some bizarre pneumonia cases.

"By January, we had heard just a little bit about the novel coronavirus," said Rigdon, a professor in the department of epidemiology and biostatistics at Saint Louis University. "By mid to late January, it was clear we would have to at least add a paragraph about the disease. We asked the editors if we could make just a few changes."

"We actually stopped the printing of the book because it was literally going to press just as the Wuhan outbreak was starting," said Fricker, a professor in the department of statistics at Virginia Tech and associate dean for faculty affairs and administration in the college of science.

The authors managed to quickly add breaking information about COVID-19 and the SARS-CoV-2 virus at a point when the number of worldwide cases was only 700. Within weeks, that number would jump to 70,000.

This kind of mind-boggling exponential growth is illustrated in the opening pages of the book. The first chapter kicks off with a fictional scenario of a pair of ecotourists from New York who pick up a new avian flu strain in a Southeast Asia live meat market and unwittingly spread it to six continents within days. It's a chillingly prescient story told with careful statistical detail in a voice that's accessible to statisticians and nonstatisticians alike.

"Given the success of public health interventions, someone casually reading this preface might think this book is purely historical and they no longer need to worry about massive disease outbreaks," the authors write in the preface. "For example, one might think the days of the 1918 Spanish Flu that killed somewhere between three and five percent of the world's population, or the 'Black Death' bubonic plague of the 14th century that killed about a third of Europe's population, are long gone. But that would be wrong."

Now, of course, even casual readers will know better. But thanks to this new book, they will also know why and how this all happened.

For more information about the ASA-CRC Series on Statistical Reasoning in Science and Society, visit bit.ly/3ea2JSi. ■

Don't Eat Grandpa: Tips for Writing Well in a Nonacademic Setting

Valerie Nirala, ASA Editor and Content Strategist

The transition from writing research papers to writing magazine articles can be quite difficult. After all, no professor ever required a magazine article about scalable Bayesian inference that could be read by a general audience. Most, if not all, prepare their students to write journal articles. Writing for a nonacademic publication such as STATtr@k, however, requires a few considerations beyond knowing your subject well. Let's chat.

No Introduction Necessary

When writing a nonacademic article, you can jump right into the meat of your message. There is no reason to lay out what you are going to tell your readers, because readers of news or magazine articles are not doing research. Sure, they are most likely reading your article to learn something, but they want to learn quickly and generally, which leads to my next point.

First Things First

Your key message should always come at the beginning of the article, with everything else you write backing up your premise. You can think of it as starting with your conclusion and qualifying it with your methods and results.

Details Matter

By details, I mean proper grammar, spelling, and punctuation. You have probably seen the following example:

Let's eat, Grandpa.
Let's eat Grandpa.

One sentence, two distinctive meanings (one a little macabre) based on the use or lack of a comma. Punctuation sets the rhythm for language and can make what you have to say both clear and easy to read. Without punctuation, readers can stumble over sentences and your meaning can become ambiguous.

Spelling is important because you can easily change the meaning of a sentence with the wrong spelling (e.g., There's no sense splitting hairs/There's no sense splitting hares [ouch!]). Worse, you can cause your message to lose credibility. It's difficult to put trust in someone's point of view when they don't know the difference between hair and hare.

Grammar is, of course, the glue that holds your message together. Without it, you would not be able

Parallel Structure

One aspect of grammar that makes a distinctive difference in how well your message is received is parallelism. Simply put, this is using the same pattern to show two or more ideas have the same level of importance. Following are examples of both the use and nonuse of parallelism:

Charles thought he would go to the store, buy candy, and his friends would be there to share.

Charles thought he would go to the store, buy candy, and share it with his friends.

Can you tell which sentence uses parallelism and which doesn't?

The first sentence does not use parallelism because the final clause (his friends would be there to share) is passive and changes the subject from Charles to his friends.

The second sentence uses parallelism because Charles continues to be the subject throughout and the verbs are all active. Bonus: It's easier to read.

to communicate with a broad audience. When you don't use proper grammar, readers will know something doesn't "sound" right, even if they can't point out what's wrong. This is called a stumbling block. Stumbling blocks cause readers to stop briefly and wonder what they missed or even reread a sentence before moving on. Simply put, they are distractions that keep readers from understanding your message (see Parallel Structure).

Friends Don't Let Friends ...

Until you get the hang of nonacademic writing, make sure to ask a friend with more experience writing for a news outlet or blog to read over your work. A good friend will want to help and won't judge you.

The good news is being able to communicate with a general audience will make communicating with a scientific audience even easier. Not only will you have the knowledge and vocabulary down, you will be able to finesse away any stumbling blocks. ■



With a PhD in statistical astrophysics, **David Corliss** leads a data science team at Fiat Chrysler. He is the founder of Peace-Work, a volunteer cooperative of statisticians and data scientists providing analytic support for charitable groups and applying statistical methods in issue-driven advocacy.



STATS4GOOD

JSM 2020—Everyone Counts: Data for the Public Good

The Joint Statistical Meetings—one of the largest statistics events in the world—is going to be virtual this year for the first time. The spotlight will be on the important work we share: *Everyone Counts: Data for the Public Good*. This focus means a long list of events and presentations, making JSM 2020 the largest, most diverse Data for Good event in history!

Such a large conference with so many opportunities for meeting, learning, and collaborating brings with it some complexity. In terms of logistics, nQuery has published a helpful blog post at <https://blog.statsols.com/jsm-2020> about the conference with lots of useful details all in one place. You can also check out the online program at ww2.amstat.org/meetings/jsm/2020/onlineprogram and use the search engine to find the presentations and other events.

As for the virtual format, I have been working with colleagues remotely for a number of years

and can say there is a set of skills and practices that can help make it work well. JSM gives all of us an opportunity to practice and develop remote collaboration and partnerships. As most of us are becoming more familiar with virtual meetings, JSM is offering a new, global opportunity to connect outside and after the event. We can set up our own virtual meetings to leverage the connections we make at JSM, explore the research more deeply than is possible in a short presentation, develop new resources, and forge new partnerships. JSM has become the catalyst for virtual collaboration in Data for Good throughout the year.

There are so many great talks this year; using the search engine will help you find what interests you most. With this year's theme, the keynotes will be of particular interest, however. Also following JSM's theme, the Caucus for Women in Statistics, Statistics Without Borders (SWB), and the Social Statistics

Section will present Data Science for the Public Good August 3 from 1:00 p.m. to 2:50 p.m. EDT with a series of talks from leading D4G researchers. Another session that stands out is Statistical Humanitarian Groups Making a Difference from SWB. It will feature presentations from SWB; DataKind; Human Rights Data Analytics Group; and the AAAS Scientific Responsibility, Human Rights, and Law Program. The session is August 5 from 10:00 a.m. to 11:50 a.m. EDT.

On August 4 from 10:00 a.m. to 11:50 a.m. EDT, the Committee on Scientific Freedom and Human Rights will sponsor an invited panel—Statistics at the Border: Migration, Detention, and Assimilation. Another important issue of the day, the COVID-19 pandemic will be explored in no fewer than four presentations, including a talk about data visualization and how misinformation spreads by Zoe Liu in Visual Stories That Count!

Other sessions tied to this year's theme include Enhancing the Dissemination of Data for the Public Good on Monday morning, Massive Administrative Data to Advance the Public Good on Wednesday from 1:00 p.m. to 2:50 p.m. EDT, and Achieving Your Potential in Statistics Through Different Organizations, presented by the Royal Statistical Society Thursday from 1:00 p.m. to 2:50 p.m. EDT. In addition to topics specific to Data for Good, attendees will want to look for presentations about statistical methodologies needed in our research (e.g., Kristian Lum's talk, "Statistical Challenges in Casualty Estimation," on Monday afternoon).

JSM 2020's virtual format and lower fees make it more accessible than ever. Taking some time to plan, using the online program's search engine, and deciding which talks and events to attend will do a lot to make the most of it. If you aren't able to attend, you can still mine the search engine for new ideas, case studies, connections, and methods.

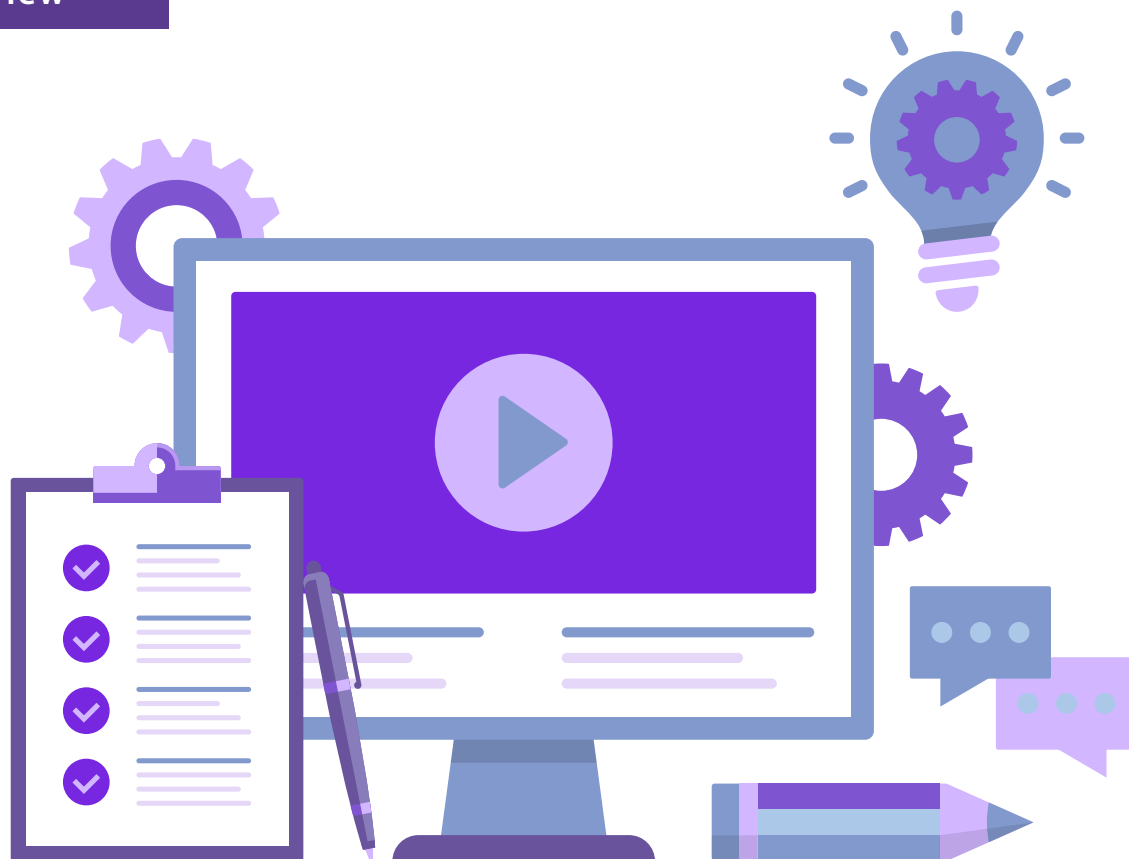
So many conferences have gone virtual due to the COVID-19 pandemic, creating a new environment for learning and collaborating. The immense impact of the pandemic on how we work won't go away with the lessening of this crisis. Right now, new practices and procedures are being developed, refined, and implemented on scales as small as video conversations between two colleagues and as large as the biggest statistical meeting in North America. This is the new normal.

This new working environment, rich with opportunities, will be on full display at JSM. Now is the time to make new connections, learn new skills, and start new collaborations. The virtual events we see at JSM and other conferences can be both the impetus and the classroom for ongoing virtual meetings, hackathons, and other new activities. The result is a greater democratization of analytics, giving new meaning to JSM 2020's theme of *Everyone Counts*. We are working in a new, globally connected environment in which every researcher, student, retiree, and volunteer has opportunities like never before to make an impact with data for the public good.

Get Involved

In D4G opportunities this month, check out the AAAS Science & SciLifeLab Prize for Young Scientists, awarded annually to early-career scientists in four areas in the life sciences with great potential for Data for Good, including ecology and the environment. Applications are due July 15. Find out more at www.sciencemag.org/prizes/science-scilifelab-prize-young-scientists.

I'm writing this column during ongoing protests by people seeking racial justice. Something I have observed is frustration about calls for action that have been heeded little while exclusion, marginalization, and violence have continued. Even as large-scale protests have captured the attentions of millions, the deadly pandemic of poverty continues with no vaccine in sight. The protests, COVID-19, and poverty are all linked, affecting the same marginalized populations in vastly disproportionate numbers. As our society struggles to find more durable solutions, statistical science is playing a vital role in identifying root causes and recommending strategies to effect real and lasting change. This is my personal invitation to each of you to consider new ways and new science to meet the challenge. In the fight for human dignity, everyone has a role to play, and the science we bring is one of the most powerful weapons in the arsenal of peace and justice. ■



Lessons Learned and Remaining Challenges for Online Seminars and Conferences

Lauren Kennedy, Monash University; **Guillaume Basse**, Stanford University; **Andrew Gelman**, Columbia University; **Guido Imbens**, Stanford University; **Yajuan Si**, University of Michigan; **Dominik Rothenhausler**, Stanford University; and **Jann Spiess**, Stanford University

The spread of COVID-19 has slowed economies and stopped travel throughout the world. For academics, classes and research collaborations have moved online. But the pandemic has disrupted two other essential aspects of academic life: conferences and seminars, which have for the most part been canceled. Existing collaborative research (except when involving laboratory or field work) can easily move online but cannot replace conferences and seminars, which are key opportunities for developing new collaborations, especially for early-career researchers who are also losing opportunities to promote research contributions, gain valuable feedback, and interact with more senior colleagues outside their advisers' networks.

An obvious solution is to move conferences and seminars online, much like regular courses, but this has proven challenging for a number of reasons. As a community, we have had relatively little experience organizing online conferences and seminars compared to online courses, which have been around for at least a decade on various platforms.

As an attempt to accelerate our understanding of this new environment, we share our experiences from running a two-day online conference (jazzystats.com/mrp2020) on multilevel regression and post-stratification and two ongoing virtual seminar series on causal inference (sites.google.com/view/ocis) and econometrics (www.chamberlainseminar.org), each with hundreds of participants. The move to online

meetings presents challenges but also many opportunities that are worth tapping into.

The online conference (conducted by LK, YS, and AG) and the online seminar series (conducted by GI, GB, DR, and JS) were both conducted through Zoom. Some of the advice and reflections here are specific to the technological possibilities of Zoom, but others we believe stand more broadly.

The online conference took a planned workshop with 20 speakers and 50 participants, originally scheduled to be held in a single room on campus, and opened it up to a conference with more than 150 participants. The seminar series were set up as virtual meetings from the outset and met for one hour or 90 minutes, respectively, with new speakers and discussants each week, regularly attracting several hundred attendees.

Technology

The conference was run using a Zoom professional account, which allows for up to 300 attendees and a 24-hour meeting time. The seminar series were run in webinar format, which has a number of additional features, including moderation, live broadcasting, and a high number of view-only attendees. The conference also used Google forms extensively for various organizing tasks.

It is hard to participate in an online conference if you do not have a good internet connection. Even leaving this aside, there were other accessibility challenges. Attendees were allowed to use videos at the start of the online conference, but we eventually had to turn off all video capabilities to reduce the internet demand. Over the two days, streaming the conference took about 5 Gb. The seminars had one video stream, which switched between the moderator, the speaker, and the discussant, along with a back-up plan for the speaker to share slides before the talk and call into the meeting if necessary.

In-person conferences can be a challenge for individuals with visual impairment. Immediate slide sharing and being able to view the content on one's own screen potentially made the written content easier to view. However, poor color schemes were just as common. In addition, because participants posted questions in the chat, it seemed more difficult to remember to repeat questions into the microphone.

One potential solution would be to use the hand raise function or ask participants to post questions in the chat. However, even when encouraged, these were not readily undertaken.

Schedule

The online conference was hastily moved from an in-person schedule to an online schedule, and so it retained the overall outline of a typical conference: session, break, session, lunch, session, break, session.

The online seminars were always intended to be virtual, so the typical structure was adapted to a virtual format, with the seminars interspersed with opportunities for questions, a discussant at the end, and one of the coauthors available in text chat to answer questions immediately.

Accessibility and Cost

All the authors hoped the move to an online conference would create greater diversity and accessibility. In some ways, this worked out. The seminar series would never have been able to schedule such a geographically diverse group of speakers had they been run in person at a single location. The conference, which was moved online after the speakers were invited, saw a surge in the number of participants and geographic diversity, and the registration fee was moved from \$50 to \$0. We tried to reach broad audiences using an open webpage where anyone could register and advertising on blogs and through email lists.

However, the virtue of being virtual did not solve all accessibility challenges. One immediate challenge was the time zone. The conference was held in US Eastern time (EST), which covers late afternoon to late evening in Europe, but the main organizer (LK) was in Australia, where it was an overnight conference. Likewise, the seminar series were hosted at an accessible time for Europe and North America. Unfortunately, the usual argument for hosting the majority of international conferences in North America and Europe still holds for online conferences—it makes sense to host an event at a time that is most convenient for the majority of attendees.

An advantage of online meetings is their cost is close to zero—no need to pay for airline flights,

hotels, and conference rooms—but societies using conferences as a source of income will need to consider the cost structure. One question going forward is whether more conferences and seminars should go online to save the cost and environmental impact of in-person meetings.

Online seminars make it easier to overcome logistical barriers to diversity for both presenters and members of the audience. Yet, in a world where a few big online seminars and conferences replace many small opportunities to present work, they may not resolve—and even increase—the exclusivity of speaking spots. We therefore think inclusiveness along many dimensions, as well as a healthy number of diverse seminars and conferences organized by equally diverse groups of scholars, should not be taken for granted.

Presenting and Moderation

Talking to silence is hard. Talking to silence without any feedback is harder. This can be mitigated by having one or two people (enthusiastic noddors and smilers) to give visual feedback, but this can increase internet demands.

Timing has been difficult. Whoever thought of the flashcards at the front of the audience was a genius; none of the authors has found a good alternative. Options include verbally interrupting (disrupts flow), posting in chat (often missed or seen at the wrong time), or posting text overlay on the videos (likewise). The best option may be to give the time control job to each speaker, who would be told in advance that it is their responsibility to pause when appropriate, answer questions from chat when they see fit, and end on time (or else be stopped abruptly). When speaking remotely, it is not so difficult to keep an eye on the clock and to occasionally check the chat box, if you know this is your job.

But the move to online seminars also offers new opportunities to improve the flow of presentations and the quality of questions. It can be difficult for the presenter to keep track of a chat window, so the online seminars have been relying on a moderator to curate questions and call on the most relevant ones during breaks chosen by the speaker. Although

born of a necessity to adapt to an online world, the resulting flow of presentation only interrupted at intended points has produced results superior to in-person seminar presentations in front of small audiences (which are interrupted all too frequently) or huge audiences (where nobody asks questions).

Networking

Face-to-face meetings facilitate social interaction and soft information transfer. Meeting academic idols, speaking face-to-face with colleagues, and having discussions over coffee are valuable to academic endeavors. The online conference tried several methods to encourage and allow for this networking with limited success.

We first tried breakout rooms at the end of each session during the scheduled 15-minute break periods of the conference, with participants randomly partitioned into rooms of three or four people each using the breakout function in Zoom. The technological functionality worked well, but the practice was not successful. The conversations were awkward and many people did not join the rooms (leading to the host reshuffling people). By the third break session, few people were participating.

The conference also used a birds-of-a-feather session at the end of the first day. For this, ideas for session themes were solicited, participants elected their session through a Google form, and then they were allocated to breakout rooms to discuss. This seemed to work much better than the breakout rooms during the break periods. We conjecture this might have been because there was a purpose and a natural conversation leader/organizer.

Following this insight, we used breakout rooms at the end of each session, with each hosted by a speaker from that session, the next day. Participants who wished to join were either randomly allocated or could elect a specific speaker. This consistently led to more participant engagement throughout the remainder of the networking sessions, and we encourage this format for every session—not just those preceding breaks.

One aspect of in-person meetings that has been difficult for us to duplicate is the flexibility with

which a meeting participant can come up to individuals or small groups, along with the corresponding ease of breaking off interactions and moving to the next one. If there were some additional feature that allowed participants to see who was in the breakout rooms and move freely between them, this might get closer to this experience.

For one of our online seminars, we implemented additional networking sessions afterward, in which we particularly encouraged graduate students to participate. Whereas the main seminar was set up as a webinar in which only speakers were visible, these side sessions allowed direct exchange between all participants. While hardly feasible for larger groups, this worked reasonably well with the 20–30 people typically signed up for post-talk discussions. It could be worth putting in additional effort to facilitate building connections (e.g., sign-up sheets at scheduled fifteen-minute group meetings after the seminar), following the successful model of the birds-of-a-feather meetings at the end of the day in the conference.

Openness

There are benefits and costs to making an academic event open. Both the conference and seminars were open to all, but the setups were different. The conference used a standard registration form, from which an email list was made and Zoom link and password were emailed to all registered participants 24 hours ahead of time. This enabled us to allow full participation from all participants during the conference with limited moderation. The seminars, in contrast, were fully open, with public links. There were some challenges with Zoom bombing in earlier seminar sessions, but the meeting was not interrupted and attendees did not see messages sent by the Zoom bombers due to moderation and limits on participation.

Another decision is whether to record sessions. An advantage of online meetings is how easy it is to record. With Zoom, this can be done with the press of a button, and indeed the seminar series were recorded and the sessions posted on YouTube. Recording sessions enhances the accessibility of the

session for participants who are unable to attend and produces a product that can be useful for years to come. However, there is a concern that recording could inhibit active participation by less-established researchers, both in presenting and questioning, and so we chose to only post slides for the conference. In addition, there are privacy concerns where participants are working from home.

Overall

COVID has interrupted academic work, including moving seminars and conferences online. We think these online conferences and seminars—often started as a quick replacement to the holes COVID has created in academic life—are here to stay beyond the current crisis.

The growing number of online seminars and conferences do some things better than the in-person events they replace: They are more inclusive, providing wide audiences with high-quality content and reducing travel barriers for speakers and discussants; they allow for innovation in how questions are asked and answered; and they reduce the economic, ecological, and personal strain from traveling. However, they lack when it comes to important networking functions.

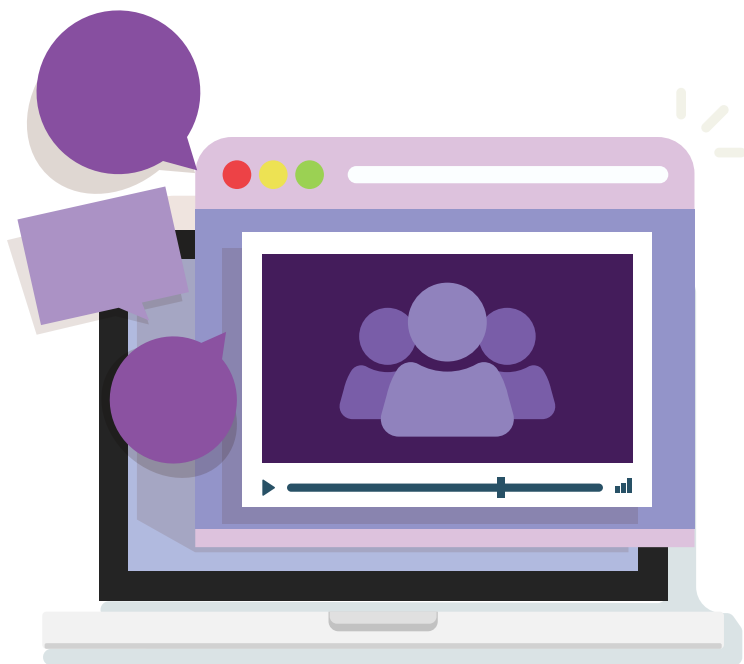
We think online conferences and seminars can unlock additional potential once we put more emphasis on these “soft” aspects, which go beyond presentations and discussions to consider the larger role of seminars and conferences in academic life.

Conferences and seminars, large or small, tend to follow the same structure and format when conducted face-to-face. Moving to an online version is not as simple as it sounds and has a number of challenges academia will need to understand in the coming months. There will not be a one-size-fits-all solution, so experimentation with varying formats and side programs for networking should continue.

For our large seminar series, we are experimenting with different formats, such as varying between one paper in a seminar, three shorter papers on similar topics, or one methodological paper and one applied paper. We also plan to experiment

MORE ONLINE

Check out the virtual conference and two virtual seminars organized by the authors: jazzystats.com/mrp2020, sites.google.com/view/ocis, and chamberlainseminar.org.



with panels on particular topics, with questions solicited in advance. Having multiple presenters makes it easier to mix senior and junior people without losing the audience. We should be much more proactive in trying out formats that would be difficult to do in live seminars. Not all of these new ideas will work, but we should take advantage of the opportunity to learn by experimentation.

For a small conference that was intended to have a small burden for participation, a more closed conference enhances a community feel and increases participation from early-career researchers. However, for greater dissemination and impact (such as a larger annual meeting or seminar series), a more open format makes sense.

Face-to-face conferences are implicitly structured by their physical constraints. A meeting can have 20 or 100 or 1,000 or 10,000 participants. A workshop that meets around a conference table will feel different than a session held in a traditional classroom, which in turn has a norm of participation that is different from a lecture in an auditorium. The very act

of moving from room to room, or choosing among parallel sessions, can stimulate unexpected interactions. Snack and coffee sessions lower the barrier to initiating conversations with strangers.

In contrast, the flatness of the computer screen and the intrusion of everyday life in our homes can make all online interactions feel the same. Therefore, it may be beneficial for organizers to come up with ways to provide a seminar- or conference-like feeling. We can't fly people to a distant city or trap them in a hotel for two days, but we can prime the pump by demonstrating informal conversation of the sort present at fun and productive academic meetings and creating structures that enable participants to do so as well.

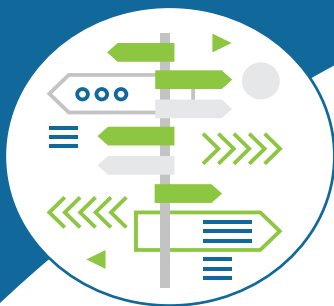
At the same time, we should make use of the advantages of online meetings, most notably in technology and accessibility. For example, technical talks can share code in a way that would be more challenging in a face-to-face conference or seminar. And, perhaps most importantly, online seminars are accessible to people with disabilities or without the financial resources to travel to a distant location.

We hope in the not-so-distant future to return to close, in-person interactions. When this happens, let us make an effort to use online tools to be more inclusive.

Finally, we think it is important to not just experiment, but to share what we have learned from this experimentation. As we all innovate around creating engaging and diverse academic online experiences and learn to overcome technological challenges in their realization, we can stand on the shoulders of a community that tries the same—across continents and disciplines. ■

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Welcome!



THE PANDEMIC JSM

David Banks, JSM 2020 Program Chair

As *Futurama*'s Professor Hubert Farnsworth says in his catchphrase announcement of potential disaster, "Good news, everyone! The JSM is going virtual." But I think we can make it work.

I write this at the end of May to make the June 1 submission deadline for the July issue of *Amstat News*, so there are still details being sorted out by the amazing ASA staff. But there is no question this will be a different JSM experience than we have ever had, and all the program chairs are determined to make this the best experience we can possibly manage.

First, I am delighted to report that Nick Jewell of the London School of Hygiene and Tropical Medicine and the University of California, Berkeley and Britta Jewell of Imperial College have agreed to give a father-daughter public lecture that will be open to the world. Their topic is the epidemiology of the coronavirus outbreak and its likely social and economic impacts.

Second, we shall have an invited session that honors the 100th birthday of C. R. Rao. The speakers are Sir David Cox (Oxford), Brad Efron (Stanford), and Don Rubin (Harvard, Temple University, and Tsinghua University). There is a possibility Rao will participate, as well.

Third, I am pleased to announce there will be three late-breaking sessions. One will be a panel discussion on COVID-19 by Susan Ellenberg (University of Pennsylvania Perelman School of Medicine), Tom Fleming (University of Washington), Dean Follman (National Institute of Allergies and Infectious Disease), Elizabeth

Halloran (Fred Hutchinson Cancer Research Center and the University of Washington), Andrew Lawson (Medical University of South Carolina), Dionne Price (US Food and Drug Administration), and Lance Waller (Emory University Rollins School of Public Health).

Another late-breaking session was organized by Sir Bernard Silverman (Oxford University) regarding a National Academies panel report that appeared this year on statistical methods to estimate the amount, kind, and location of human trafficking. The third late-breaking session was organized by Eric Kolaczyk (Boston University) to showcase a recently completed National Academies report on data science education.

Normally, JSM has only two late-breaking sessions, but the Committee on Meetings was comfortable approving three given the strength of the three proposals and going virtual this year.

Sadly, we shall have three memorial sessions for four distinguished statisticians. One is for David Wallace (The University of Chicago); one is for Cliff Spiegelman (Texas A&M); and one is a shared session for two eminent British researchers in survey methodology, Chris Skinner (London School of Economics) and Fred T. M. F. Smith (University of Southampton).

Now, let me provide a brief layout of the current thinking about the mechanics of a virtual JSM. The meeting will be held Sunday through Thursday, August 2–6. Sunday will start with an orientation to the virtual meeting platform, an orientation for first-time attendees, and invited posters. Monday through Thursday will begin at 9:45 a.m. EDT, and

JSM 2020 VIRTUAL CONFERENCE

August 2-6

EVERYONE COUNTS Data for the Public Good

there will be program bands with parallel or plenary sessions from 10:00 a.m. to noon, 1:00 p.m. to 3:00 p.m., and 3:00 p.m. to 5:00 p.m.

Bear in mind that details may change as planning evolves, but the present plan is invited and topic-contributed sessions will be live and recorded. Registrants will have access to all recorded sessions until the end of August, so one benefit of this crisis is people will be able to hear more talks and there will be no “conflicts of interest” when sessions on similar topics are scheduled for the same time band.

Speakers in contributed sessions will prerecord their talks using the communications platform the ASA used for the Symposium on Data Science and Statistics in June and their talks will be posted and available until August 31, as well.

Poster presenters will also upload presentations in advance with the option to include an oral component walking people through the details. These recordings will be available through August 31.

For both contributed papers and posters, attendees will have the opportunity to ask questions for discussion throughout JSM, and presenters will be assigned specific times to be available to respond.

We are also working to craft activities that will mimic some of the JSM social experience. I don't think we can replicate it perfectly. For me, it feels as though I take 10 steps at JSM, see someone I taught, who taught me, with whom I worked, with whom I co-authored, or whose wedding I attended and we have a sincerely meaningful and heartfelt conversation that lasts about two minutes. Then, I take 10 more steps and repeat. It is exhausting and exhilarating, but it is probably not the most rewarding kind of socialization. So, I strongly encourage everyone to start thinking about making personal, prearranged Zoom or Skype meetings with friends to catch up. And I hope the officers of ASA sections who want to hold receptions will make similar arrangements (officers should contact the ASA Meetings Department at meetings@amstat.org if they don't have convenient access or home bandwidth to set that up).

The ASA staff plans to hold JSM functions such as the First-Time Attendee Orientation, the Student Mixer, and the Opening Mixer. I don't think we can do the JSM Dance Party, but since people laugh when I dance, I'm more relieved than regretful.

The JSM EXPO will also be available virtually, with familiar companies and new vendors all supporting the meeting and available each day for your questions. The Career Service will be entirely online and run concurrently with JSM. It is a launching point for employers and applicants to connect. Registered employers have access to an online search and all candidate information. Most regularly held committee meetings or section business meetings will be scheduled outside of JSM.

Chef Paul Prudhomme was once asked by a dieter about low-fat replacements for butter. He scoffed at the idea and said something like, “There is no replacement for butter. Do something different!” In that spirit, don't expect this JSM to simulate the in-person experience. It will be different, and some of it can be much better. Without hotels and airfare and with a reduced registration fee, this will be much less expensive in terms of both money and time. Without travel, it will be much kinder to the environment.

Looking ahead, I predict nearly all large scientific conferences will offer the option of virtual participation. Aging academics like to sleep in their own beds and avoid the exigencies of travel. Statisticians from smaller companies, agencies, and colleges will appreciate the affordability. And everyone will be glad to recover more personal time and have a lighter carbon footprint. If we learn to do this well, there will be many upsides. ■

MORE ONLINE
Online Program:
bit.ly/30W9luz

Schedule at
a Glance: bit.ly/30YVVTQ

Follow **#JSM2020**
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announcements.

Hello!



This year's winner of the Gerald J. Hahn Q&P Achievement Award is **Martha Gardner**, a leading expert in quality methods and tools. Gardner is a knowledgeable coach and teacher who has used her domain expertise in mathematics and statistics to take key leadership positions within GE Global Research. She has worked directly with GE businesses to leverage her deep expertise in applied statistics to solve supply chain and manufacturing quality issues. As a chief scientist at GE Global Research, she led initiatives for Six Sigma, Lean Six Sigma, statistical process control, big data analytics, and the theory of inventive problem-solving.

In her role as executive quality leader of process improvement at GE Aviation, Gardner and her team have had a significant impact on product quality and delivery, focusing on reduction in losses. Her positive and enthusiastic leadership style engages the teams on the manufacturing floor, leading to stronger teams and more effective and creative solutions to critical business problems.

Gardner is driving renewed focus on producibility and process capability and recently established a technical career path and community for technical leaders who are driving quality advancement under her mentorship.

In previous years, the Gerald Hahn Award winner gave the Q&P plenary address at the Fall Technical Conference. However, due to the health and financial effects of COVID-19, the Fall Technical Conference will not be held this year.

For details about the Gerald J. Hahn Q&P Achievement Award, visit the Quality and Productivity Section website at bit.ly/3fqSzwM.

Contributed by Ana Del Amo, Gerald J. Hahn Q&P Achievement Award Chair ■



Samanthi Konarasinghe in Melbourne, Australia, March 6–7 with Waheed Ahmad Baig at the International Conference on Research in Life-Sciences and Healthcare

W. G. Samanthy Konarasinghe, from the Institute of Mathematics and Management in Sri Lanka, introduced three new forecasting techniques: circular model (CM), circular indicator (CI), and Sama circular model (SCM).

The circular model is based on Newton's Law of Circular Motion, Fourier Transformation, and least square regression. The most important property of the CM is it can be applied for either stationary or nonstationary series. Further, the model is capable of capturing both seasonal and cyclical patterns of a time series. Yet the CM was applicable only for trend-free series, so it was improved and named the Sama circular model. The SCM is superior to decomposition techniques and auto regressive integrated moving average (ARIMA) / seasonal auto regressive integrated moving average (SARIMA) in modeling wave-like patterns.

The circular indicator was developed to measure the risk of returns of share market investments. Development of the CI was based on the motion of a particle in a horizontal circle (Newton's Law) and Dharma wheel philosophy. The Dharma chakra or "Wheel of Dharma" is a widespread symbol used in Indian religions such as Jainism, Hinduism, and Buddhism.

Konarasinghe won the best paper award from the International Conference on Advances in Mathematics, Computers, and

Physical Sciences and International Conference on Business, Economics, Social Sciences, and Humanities for her research findings. She was awarded the IMRF Best Scientist Award, India and invited to speak on her findings at several conferences. She was the keynote speaker at the International Conference on Science and Technology Research, International Conference on Research in Life-Sciences and Healthcare, and International Conference on Modern Trends in Mathematics.

For more information about Konarasinghe's research, see the *International Journal of Research & Review* article at bit.ly/2URmJ4v, the *International Journal of Novel Research in Physics Chemistry & Mathematics* article at [www.novelty-journals.com > download > file=SamaCircularModel](http://www.novelty-journals.com/download/file=SamaCircularModel), and the Google Scholar profile at bit.ly/2BeQagt. ■

ASA member **Phil Nyakauru Gona** wrote an opinion-editorial titled "Global Message from Scientists on COVID-19," which was published in *The Sunday Mail* of Zimbabwe. The article was prepared on behalf of members and alumni of Global Young Academy and delivered specific recommendations for sharing accurate information about the epidemic and opening two-way communication between scientists and the public. You can read the published piece at www.sundaymail.co.zw/global-message-from-scientists-on-covid-19. ■

Ronald Snee Recognized as 2020 Entrepreneur of the Year

Longtime ASA member Ronald D. Snee, a Washington & Jefferson College alumnus and founder and president of Snee Associates, LLC, was recognized as Entrepreneur of the Year at the college's annual Entrepreneurial Leadership Dinner February 20. The award was presented by W&J College President John C. Knapp.



Washington & Jefferson College President John Knapp (left) presents Ronald Snee with the Entrepreneur of the Year award.

After earning his bachelor's degree in mathematics from W&J, Snee completed his master's degree and doctorate at Rutgers University in applied and mathematical statistics. In his current work, he provides guidance to senior executives in their pursuit of improved business performance using Lean Six Sigma, quality by design, process modeling, and other improvement approaches that produce bottom-line results. His work focuses on the pharmaceutical and biotech industries, with clients that include Merck, Novartis, ImClone, Human Genome Sciences, Celgene, and Kraft Foods. He also serves as an adjunct professor in the pharmaceutical programs at Rutgers University and Temple University.

Prior to his current assignment, Snee used his broad experience and expertise as principal at Tunnell Consulting and as Six Sigma deployment leader with SBTI. He has played a major leadership role in process improvement initiatives for 32 organizations.

He began his career as a practicing statistician at DuPont in 1968, following two years as an assistant professor in statistics at Rutgers University. During his 24 years at DuPont, Snee progressed from being an internal statistical consultant to

managing statisticians, software engineers, and a variety of engineering specialists to holding corporate-level positions in R&D planning and continuous process improvement. While at DuPont, he also was the originator and contributor to the strategies for formulations development, which have been used with substantial benefit in chemical, process, pharmaceutical, biotechnology, and petroleum industries. In recognition of this contribution, he became the youngest professional ever to receive the American Society for Quality (ASQ) Walter A. Shewhart Medal for the excellence of a technical contribution in the field of quality when he was 44 years old.

Snee has held a number of positions of trust in the consulting industry and corporations since his retirement from DuPont. Most notably, he was the vice president for process assurance at Bell Atlantic, where he was responsible for leading the corporation in the implementation of process management, applying the concepts of statistical thinking to improve customer service. His group defined Bell Atlantic's core business processes, established roles and responsibilities for process owners, and created a corporate-wide model for business process management.

Prior to Bell Atlantic, Snee served as vice president of consulting at Joiner Associates from 1992–1996. He headed the firm's consulting practice with the responsibility of managing the consultant force and overseeing client relationships. His clients included Bell Canada, Xerox, Reliable Insurance, USA TODAY, and GE Capital. He also served as president of the Delaware Quality Consortium that administers the Delaware Quality Award and served as judge for the award.

Snee has been awarded ASQ's Grant and Distinguished Service medals and the ASA's Deming Lecture, Dixon Consulting Excellence, and Gerry Hahn Quality and Productivity awards. He has published seven books and more than 330 papers in quality, performance improvement, management, and statistics. His work has been recognized by more than 30 major awards. Snee is an honorary member and fellow of ASQ and a fellow of the ASA and American Association for the Advancement of Science. He has also been elected as an academician in the International Academy for Quality. ■

MORE ONLINE

For more information about W&J College, visit www.washjeff.edu.

Obituary

Remembering George Cobb (1947–2020)

Allan Rossman and Thomas Moore



George Cobb

An inspiring innovator, George Cobb changed the face of statistics education. He gave this modest branch of our profession a level of respect it had not had before but continues to enjoy. Much as Bob Dylan felt the heat of his era and gave it fuel and oxygen through his ideas and words, George saw teaching statistics as too important for the status quo. Over his lifetime, George showed a remarkable ability to sense the need for (often radical) change and offer a prophetic and eloquent voice for that change. We cherish this self-description George once provided: “Despite his Quaker upbringing, the sight of an apple cart triggers happy fantasies of how to upset it.”

George passed away on May 6, less than a week shy of his 73rd birthday, having been ill for many months. He was a North Carolinian by birth. His father, Whitfield, was a professor of statistics at Virginia Tech and his mother, Polly, taught German and Russian.

He credits his early and enduring interest in mathematics to two wonderful pre-collegiate teachers. He attended Dartmouth, taking nearly enough mathematics for a major and enjoying the influence of John Kemeny and Laurie Snell, who were changing the landscape of mathematics education as George would later do in statistics. But George majored in Russian, because he loved the patterns in Russian poetry. He had a life-long love of word play, which he used so

effectively. George’s Dartmouth years foreshadowed a person who would deftly bridge C.P. Snow’s “Two Cultures.”

The Vietnam War derailed George’s plans for graduate study in Russian, and his alternative service as a conscientious objector at the Medical College of Virginia kindled his interest in statistics. Colleagues there convinced him that studying statistics would support his goal of teaching collegiately and his interest in mathematics, while providing marketability in a job search. George earned his PhD at Harvard under Art Dempster, writing his dissertation on conditional inference, and had the privilege of helping Fred Mosteller teach introductory statistics.

George’s first and only job after Harvard was as a faculty member at Mount Holyoke College, where he became the Robert L. Rooke Professor of Mathematics and Statistics and taught from 1974 until retirement in 2009. At Mt. Holyoke, George became beloved and venerated as a colleague, teacher, and mentor.

His writing and leadership garnered similar high regard throughout the statistical world. In the online outpouring of grief and gratitude after his passing, George’s ability to write about statistics was central. Paul Velleman spoke for us all in saying, “George changed the way we thought about teaching and wrote that in ways that were new and stunning to those of us who read him.”

“Stunned” captures how we felt back in 1987 upon reading George’s first major article in statistics education, a book review in *JASA* titled “Introductory Textbooks: A Framework for Evaluation – A Comparison of 16 Books.” This article constituted a 20-page tour of George’s mind, as much data analysis as commentary—the 16 books as cases, wisely selected variables, and cool graphics like a two-way table of “number of data sets” by “authenticity index.” Stunning in its originality, eloquence, and insight, imbued throughout with George’s humility, this article exhibited qualities that all in the stat-ed community now associate with George.

This article introduced us to George’s aphoristic writing. If one took “George Cobb for \$400” on *Jeopardy*, and the answer was “Judge a book by its exercises, and you cannot go far wrong,” none of us would fail to respond, “What was the take-away message from George Cobb’s 1987 *JASA* review of textbooks?”

In 1992, George led a focus group of eminent statistics educators that resulted in the chapter “Teaching Statistics” in the MAA volume *Heeding the Call for Change*. In a 2015 interview for the *Journal of Statistics Education*, George described his work on this report as “almost exclusively editorial,” but added, “I worked hard at that ... because I wanted to turn good ideas into something that would be brief enough, and pithy enough, to be memorable, ...”

It would have been memorable even without the first sentence, but that first sentence, well, it stunned us once again and we knew we were in for a great read:

Shorn of all subtlety and led naked out of the protective fold of educational research literature, there comes a sheepish little fact: lectures don’t work nearly as well as many of us would like to think.

As “Framework” was a call for data analysis as respectable intellectual activity, “Teaching Statistics” added a second key ingredient to modern statistics education—active learning.

George co-authored two articles on the relationship of statistics and mathematics with another giant in our profession, David Moore, for the *American Mathematical Monthly*. These articles described how differently

the two disciplines regard the interplay between context and abstraction, with implications for statistics education.

George upset apple carts through his many keynote conference presentations, as well. Bob Hayden reflected that “George had a rare gift



George Cobb in 1995.

for entertaining people while making them think at the same time. He often told audiences they were doing it all wrong and needed to change, yet they walked out of his talks laughing and smiling.” A stellar example is George’s banquet presentation at the first US Conference on Teaching Statistics. George told the audience that by emphasizing procedures based on the normal distribution, they were teaching a Ptolemaic curriculum for introductory statistics. George argued that “randomization-based inference makes a direct connection between data production and the logic of inference that deserves to be at the core of every introductory course.” The inaugural issue of *Technology Innovations in Statistics Education* in 2007 published George’s article on this topic, which has achieved seminal status and inspired many teachers to implement randomization-based inference.

George continued to think and write about current challenges facing our profession into his retirement. He wrote the lead article for a 2015

special issue of *The American Statistician* (*TAS*) on curricular reform. George's title took direct aim at another apple cart: "Mere Renovation Is Too Little Too Late: We Need to Rethink Our Undergraduate Curriculum from the Ground Up." George also contributed to, and provided the opening lines of, the ASA's influential statement on p -values that appeared in *TAS* in 2016.

As a teacher, George practiced what he preached and preached what he practiced. We recall talks in which he joyfully shared making homemade slime to teach data transformations or launching gummy bears to teach factorial design, and he loved being part of the stat-ed community that shared such ideas at JSM. George could also take as well as give with aphorisms. As a champion for the liberal arts, George was particularly fond of quoting his Mount Holyoke colleague, Don O'Shea, who said, "Liberal arts colleges are where cutting-edge research from universities is brought into the undergraduate curriculum." Along these lines, George developed a Markov chain Monte Carlo course for undergraduates, using notes destined for textbook status, but regrettably not quite finished on his passing.

In 1998, George published an innovative textbook on experimental design. Later, he collaborated on a textbook for a second course in statistics. He also co-authored introductory textbooks, including one that features randomization-based inference.

For 30 years, George also served as an expert witness in legal cases. Most involved workplace discrimination, but one case concerned a hospital nurse accused of murdering patients. This case led to an article co-authored with the opposing expert witness for the collection *Statistics: A Guide to the Unknown*, a collaboration with his courtroom "adversary" evincing George's Quaker roots.

George served the ASA in many capacities: serving on and chairing committees, serving on editorial boards, and—from 2003–2006—serving as a vice president. He was the first liberal arts college statistician to serve on the Committee for Applied and Theoretical Statistics for the National Academies of Sciences, Engineering, and Medicine. The ASA made him a fellow in 1993 and gave him the Founders Award in 2007. The Boston Chapter named George Mosteller Statistician of the Year in 2016, and he earned the Mount Holyoke Faculty Award for Teaching

in 2003. George was the inaugural recipient of the USCOTS Lifetime Achievement Award in 2005, which the organization has renamed the George Cobb Award in Statistics Education.

Whether in print, at a public presentation, through his curricular projects, in a conference or professional gathering, or as a colleague, George never failed to make you think and want to try things out. His writings are still worth reading because, as with most great writers, you get to see into the mind of a genius. Ann Watkins compared George not to a writer but to a composer: "George truly was the Mozart of our profession: profoundly original, lyrical, incomparably influential, and delightfully complex."



George, his wife Cheryl Cobb, and daughter Lee Tae Cobb

It feels odd and slightly inappropriate to write about George with such an emphasis on his professional life because socializing with him as a friend was such a joy. He loved humor, the outdoors, music, playing the banjo, eating good food, children, friends, and—above all—his family. George's wife Cheryl is a singer who teaches voice at Mount Holyoke, and his daughter Lee Tae is a doctoral student in media and communications at Temple University.

George also loved to read, with Dickens a favorite, so we will end by recalling the first sentence of *David Copperfield*: "Whether I shall turn out to be the hero of my own life, or whether that station will be held by anybody else, these pages must show." May we sheepishly demur on answering that question for this modest man, but also add that if we are talking heroes, well, George, you will always be one of ours.

The Cobb family has established a memorial site for George at www.georgewcobb.com.

Obituary

Clifford H. Spiegelman

Clifford H. Spiegelman, Regents Professor and Distinguished Professor of Statistics at Texas A&M University and a leader in statistical and environmental forensics, passed away May 14, 2020, in College Station at the age of 71.



Clifford H. Spiegelman

“Cliff was a person who voluntarily helped others,” said Texas A&M statistician Samiran Sinha. “He was there whenever the department needed someone, whether in presenting the department at the college level, talking with other departments, or improving or restructuring courses. I communicated with him last week regarding a paper review. He was truly a helpful person.”

Spiegelman was appointed in 2009 as a distinguished professor of statistics, Texas A&M’s highest honorific rank for faculty. He was designated a Regents Professor for 2018–2019 in recognition of his exemplary contributions to the Texas A&M University System and people of Texas. A senior research scientist with the Texas A&M Transportation Institute, he had served since 2017 as the inaugural official statistician of the Texas Holocaust and Genocide Commission as well as the statistical adviser to the Texas Forensic Science Commission. For

many years, he also was the key statistical advisor to the City of Houston’s crime lab.

Throughout his four-decade career, Spiegelman used his vast knowledge of statistics and forensic science to help free innocent people, reevaluate history, and develop sharper analytical tools for society. In perhaps the most visible and pioneering example, his expertise was key as a member of a National Research Council committee charged with evaluating the effectiveness of comparative bullet lead analysis, a forensic method most notably used in the investigation of the 1963 assassination of US President John F. Kennedy. He was instrumental in the Federal Bureau of Investigation’s 2005 decision to stop using the widespread technique after he demonstrated it to be fundamentally flawed. He also took part in a related study that determined the same for evidence used to rule out a second shooter in the Kennedy assassination—work recognized with the 2008 American Statistical Association’s Statistics in Chemistry Award.

“Cliff’s passion was good and irrefutable statistical methodology in the absence of classical experimental design,” said Texas A&M statistician and interim head of Texas A&M Statistics, Daren B.H. Cline. “He was a public face for statistics who demonstrated the relevance of our field to society and the importance of proper techniques and precise application.”

A native of Long Island, Spiegelman earned a bachelor’s in economics, math, and statistics at the State University of New York at Buffalo in 1970 and both his master’s in managerial economics and doctorate in statistics and applied mathematics at Northwestern University in 1973 and 1976, respectively. Prior to joining Texas A&M, he spent nine years in the National Bureau of Standards Statistical Engineering Division (the present-day National Institute of Standards and Technology) in Gaithersburg (1978–1987), following one year as an assistant professor of statistics at Florida State University (1976–1977). He also held visiting faculty appointments at Northwestern (1982–1983), The Johns Hopkins University (1986–1987), and Lamar University (1993–1996).

In addition to higher education, Spiegelman served as an adjunct investigator in the Biostatistics

Branch of the National Cancer Institute (NCI) Division of Cancer Epidemiology Genetics (2005–2008) and as a consultant for the NCI Proteomics Program (2005–2009). For the past six years, he spent his summers in Washington, DC, working with collaborators at the National Agricultural Statistics Service (2014–2019).

Spiegelman was a founder of the field of chemometrics, the science of using data to extract information from chemical systems by data-driven means to investigate and address problems in chemistry, biochemistry, and chemical engineering. In 2017, the international journal he co-founded, *Chemometrics and Intelligent Laboratory Systems*, celebrated his 30-plus years of service to both the publication and the discipline he helped create with a virtual special issue in his honor. An active researcher and scholar, Spiegelman authored more than 200 refereed publications that have appeared in the *Annals of Statistics* and at least 20 other statistics journals. He also contributed to five books and dozens of conference proceedings, reviews, and editorials.

One of Spiegelman's lifelong passions was using statistics to achieve justice for everyday citizens. For many years, he worked with judges and attorneys to broaden their understanding of statistics and the critical effect it often has on case outcomes and broader issues at hand. At the time of his death, he was working with colleagues and US legislators to introduce potential bipartisan legislation that would enter existing forensic evidence collected at crime scenes during the civil rights era into forensic databases. He strongly believed such a watershed move would help pave the way for countless decades-long cold cases potentially to be solved.

Spiegelman was a fellow of the American Statistical Association (1992), Institute of Mathematical Statistics (1990), and American Association for the Advancement of Science (2014), as well as an elected member of the

International Statistical Institute (1993). A two-time recipient of the ASA Statistics in Chemistry Award for best paper, he also received the 2007 Jerome Sacks Award for Outstanding Cross-Disciplinary Research recognizing innovation in statistical science and the San Antonio Chapter of the ASA's 2016 Don Owen Award for excellence in research, contributions to editorial activities, and service to the statistical community. Most recently, he was honored with the Texas A&M chapter of Sigma Xi's 2019 Outstanding Science Communicator Award.

One of Spiegelman's lifelong passions was using statistics to achieve justice for everyday citizens.

"Cliff was a great colleague and a truly outstanding statistician," said Texas A&M statistician Jeffrey D. Hart. "I don't think I've ever known anyone as dedicated to his/her profession than was Cliff. He will be sorely missed."

To read more about Spiegelman's life, visit the Texas A&M news website at bit.ly/2AKA7k5. A tribute page, "Remembering Dr. Clifford Spiegelman," has also been set up in his honor at www.innocenceproject.org/remembering-cliff-spiegelman.

Obituary

John Wesley Wilkinson

Longtime ASA member John W. Wilkinson, 91, of Acton, Massachusetts—formerly of Schenectady, New York—passed away of natural causes May 14, 2020. John was a devoted husband, recently preceded in death by his wife, Jean.

John grew up in Havelock, Ontario. He remembered spending high-school summers in the Air Cadets in Trenton, Ontario. After high school, John earned a BA from Queen's University in 1950. He met Jean in September of 1949 and decided to stay at Queens to earn his MA (1952). During his college years, he spent summers in the Canadian Navy ROTC and was active in the Canadian Naval Reserve from 1946–1952. John married Jean in 1953 in North Bay, Ontario. After their honeymoon, they moved to North Carolina, where John earned his PhD (1956) from The University of North Carolina Department of Statistics and Operations Research (analysis of paired comparison designs with incomplete repetitions).

John returned to Kingston, Ontario, and taught in the math department at Queen's University (1956–1958). He and Jean moved to Pittsburgh, Pennsylvania, in 1958, where he worked for Westinghouse. In 1965, John accepted a teaching position at Rensselaer Polytechnic Institute (RPI), where he spent the rest of his career until retiring in 1994.

In 1971, John was honored as an Outstanding Educator of America for contributions to the advancement of higher education and community service. John served as editor of *Technometrics* from 1978–1980. A member of the ASA for more than 50 years, John was honored as a fellow in 1972.

Outside of work, John and Jean were involved with round dancing. They started dancing in

1962, started teaching dancing in 1967, and started a national carousel dance club in 1976. They served on the Universal Round Dance Council board from 1995–2000 and 2008–2009, chaired several dance conventions, were involved with Roundarama and ROUNDALAB, and choreographed several dances.

John was also involved in the community, serving on the board of trustees for Girls Inc. Foundation Trust of Schenectady; volunteering with the Proctors Theatre Guild, Planned Parenthood, and the Schenectady/Nijkerk Council; and participating as a member of the Unitarian Universalist Society of Schenectady for more than 55 years. He was also a strong supporter of Jean's work with Hospice. In 2009, Planned Parenthood Mohawk Hudson presented John and Jean with the Giraffe Award for "sticking their necks out for reproductive rights." Additionally, John and Jean were honored in 2010 with the YWCA's Katherine S. Rozendaal Award for the positive impact their volunteer leadership and activities had on the Schenectady community.

John's other interests included travel, square dancing, attending cultural performances, visiting museums, sailing, skating/hockey, skiing, reading, and playing bridge and cribbage. John was a lifelong student and enjoyed classes at the Union College Academy for Lifelong Learning.

John and Jean moved to Acton in November of 2018 to be closer to their granddaughters.

To honor John's life, a donation may be made to Girls Inc. of the Greater Capital Region (<https://girlsincapitalregion.org>) or Proctors Theatre (bit.ly/2YFAjct) in lieu of flowers.

Statistical Consulting Section Responds to COVID-19

The COVID-19 pandemic has fundamentally changed life in the United States. As of May 2020, more than 100,000 Americans had lost their lives and the unemployment rate was near 25 percent.

The response to the crisis has taken shape in several initiatives—many led by statisticians—including epidemiological studies to understand immunity and infectivity, models to predict when there will be a next wave, clinical trials to identify safe and effective treatments and vaccines, and studies of the impact of various policies—including social distancing policies.

The ASA established the COVID-19 Data, Statistics, Research, and Discussion Community to facilitate collaborative science, and more than 600 recently attended an ASA and National Institute for Statistical Sciences informational webinar (bit.ly/3hE1SvA) that focused on the role of modeling this disease. As highlighted in the May issue of *Amstat News*, statisticians across the spectrum of the ASA community are diligently working to provide the necessary expertise during this uncertain time.

Applied and practicing statisticians in the ASA Statistical Consulting Section are engaged and playing key roles in COVID-19 research. Here, we highlight members of the section who are responding to COVID-19. We also laud those we did not discover, as well as the many others throughout the ASA doing similar work.

Epidemiological Studies of Immunity and Infectivity

A number of epidemiological studies of immunity and infectivity are underway. In addition to The Johns Hopkins dashboard by Wang, et al. highlighted in the June issue, **Jason Wilson**, associate professor of statistics at Biola University, has highlighted sex as a risk factor in his recently posted paper, “Systematic Review and Meta-Analysis of Sex-Specific COVID-19 Clinical Outcomes.” The paper, posted on medrxiv (www.medrxiv.org/content/10.1101/2020.05.11.20098673v1) and accepted for publication in *Frontiers of Medicine*, shows the incidence of COVID-19 in males is higher than females, particularly as symptoms grow worse.

Edward Boone, professor of statistics at Virginia Commonwealth University (VCU), is working with **Ryad Ghanam**, professor of mathematics at VCU Qatar, and **Abdel-Salam Gomaa Abdel-Salam**, associate professor of statistics at Qatar University, to build a Susceptibles, Exposed, Infected, Recovered, and Deaths (SIERD) model for predicting the next wave of COVID-19 in Qatar. The SIERD model allows for quantifying the

impact of various government interventions to slow the spread of the virus and predictions of when peak active infections will occur.

To better understand the genetic component of the disease, **Jeet Mozumdar**, statistical geneticist and bioinformatician, is performing analyses on the DNA of SARS-CoV-2.

Operating Characteristics of Diagnostic Tests for Infection and Immunity

Other researchers are focused on understanding the operating characteristics of diagnostic tests for COVID-19 and providing insight into their interpretation. **Naomi Brownstein**, assistant member at Moffitt Cancer Center, is working with her colleague **Ann Chen** on an analysis of positive and negative predictive value (i.e., false negative and positive rates) of antibodies tests under an Emergency Use Authorization from the US Food and Drug Administration. The working title of their paper is “Are Antibodies Tests Accurate? Understanding Predictive Values and Uncertainty of Serology Tests for the Novel Coronavirus.”

Isabel Allen, professor of epidemiology and biostatistics at the University of California at San Francisco (UCSF), worked with colleagues at the University of Pennsylvania and UCSF on a meta-analysis of the sensitivity of CT scans vs. the RT-PCR tests for COVID-19. The paper found lots of biased studies and few with data on both tests. Sensitivity for both tests was close to 70 percent. The paper is currently in press in *Investigative Radiology*.

Impact of Mitigation Strategies

Isabel Allen additionally conducted a survey of faculty and administrators in higher education (US and Canada) on transition plans and teaching online with Bay View Analytics and sponsored by the Gates Foundation and others. The study found that faculty are concerned about their students and administrators are concerned about financial implications. Also, both groups provided interesting findings on remote education versus online education. Lack of training materials for moving courses online was identified as the biggest issue. A follow-up survey will be conducted in late summer to assess institutions’ plans for the fall semester and what types of support faculty are getting for moving courses online. Findings have been featured in a webinar with *Inside Higher Ed* (1,500 participants) and in *The New York Times* (nyti.ms/3edEin6).

Clinical Trials and Clinical Studies

Many of our members are engaged in identifying effective treatments for COVID-19 and a vaccine for the novel coronavirus. **Frank Harrell** and **Chris Lindsell**, professors of biostatistics at Vanderbilt University, led the novel design of “Outcomes Related to COVID-19 Treated with Hydroxychloroquine Among In-Patients with Symptomatic Disease” (ORCHID). ORCHID is a Bayesian sequential parallel-group randomized clinical trial for COVID-19 that allows for continuous learning from data through the computation of probabilities that trigger go/no-go decisions about how to proceed with the trial. This work—done closely with **David Schoenfeld**, professor of biostatistics at Harvard University—involves developing a Bayesian sequential design and simulating its Bayesian operating characteristics in addition to developing Bayesian ordinal regression models so the ordinal outcome can be covariate-adjusted and the model extended to serially collected outcomes. Harrell and Lindsell have provided a detailed blueprint for our community, along with software, so others can borrow principles in designing similar studies.

Manisha Desai, professor of medicine and biomedical data science at Stanford University and chair of the ASA Statistical Consulting Section, has worked with her team at the Stanford University Quantitative Sciences Unit to create a shared infrastructure for facilitating randomized clinical trials (RCTs). This includes an international data and safety monitoring board registry of experts willing to serve on COVID trials, searchable by expertise and hosted on the Society of Clinical Trials (SCT) COVID-19 Research Resources Hub (www.sctweb.org/covid.cfm).

Also hosted on the SCT hub is the COVID-19 Endpoint Registry (bit.ly/3fAuQKD), which lists all approved endpoints in the US. Notably, coming up with the right COVID-19 endpoint has been a huge challenge, as there are no validated endpoints. In this registry, one can search for endpoints for a particular patient population or study phase and one can graphically view the diversity of endpoints and changes in endpoint choices over time. The most important component of the shared infrastructure is an adaptive master trial, which allows evaluation of multiple agents to be studied simultaneously. Such a trial allows arriving at answers about the safety and efficacy of drugs faster and with fewer resources than a traditional fixed trial design. Efficiency is gained as one does not need to reinvent the wheel each time a trial is being launched, and consolidating into one trial means less competition among individual trials that need

the same patient population to address questions about a particular drug.

Robert Podolsky, director of informatics and biostatistics at Beaumont Health, has helped design the initial sampling strategy for the Beaumont employee serology study (<https://wapo.st/2BcgelW>). This study focuses on determining antibody responses to COVID infection, estimating the prevalence of antibodies among all Beaumont Health employees, the ability to identify patients who never experienced symptoms, and the sustainability of antibody production. He has also designed a clinical trial, the SINK study, to evaluate the efficacy of using Naltrexone and Ketamine as immunomodulatory agents in trying to control the inflammatory response to the COVID virus.

In addition to clinical trials, members have designed studies to evaluate the effectiveness of various quality improvement initiatives in the clinical setting. **Joseph Rigdon**, assistant professor of biostatistics and data science at Wake Forest School of Medicine, is working with colleagues in infectious diseases to study the impact of wearing a mask on the amount of virus present in the air and on surfaces in hospital rooms using data from hospital patients with COVID-19. This study will guide best mask practices for providers during this and future similar pandemics. Additional work with colleagues in pediatric nephrology and epidemiology focuses on guidance for the design and analysis of observational studies of rates of COVID-19 and related complications in patients with hypertension who take ACE inhibitors.

Through collaborative efforts relying in part on statistical practice, we have learned much in the past six months about COVID-19. At least one treatment has emerged as promising for the severe patient, we are observing a number of disparities among subgroups of the population—with LatinX and African American populations more vulnerable than other groups—and mitigation strategies such as shelter-in-place are effective in reducing case burden ([doi:10.1001/jama.2020.8598](https://doi.org/10.1001/jama.2020.8598)).

Importantly, there is much more we need to learn. We need to better understand transmission, immunity, and the impact of various reopening strategies. We statisticians have trained for moments like this one and are being called to action. The work highlighted here shows how many of us have pivoted from our usual work to address this crisis. It also provides hope that, with so much talent and energy devoted to the crisis, we will emerge with solutions for this and future pandemics. ■

Biopharmaceutical Section Offers Summary of Dos and Don'ts for Submitting Manuscripts

Ilya Lipkovich, Eli Lilly and Company, and Alex Dmitrienko, Mediana Inc.

Recently, the Biopharmaceutical Section conducted a survey of the editors and associate editors of several applied statistics journals with a biopharmaceutical orientation (*Statistics in Medicine*, *Statistics in Biopharmaceutical Research*, *Journal of Biopharmaceutical Statistics*, and *Pharmaceutical Statistics*).

The survey was designed to be open-ended and asked the editors to list—based on their experiences—three don'ts commonly seen in submitted manuscripts and three dos. The editors were encouraged to avoid listing well-understood don'ts such as plagiarism and focus on less obvious dos that would be appreciated by statisticians preparing manuscripts.

We received 27 responses, each consisting of multiple dos and don'ts. Most respondents provided three of each kind, though some provided mostly don'ts or dos. Because our sample size fell short of $n=30$, we refrain from any formal statistical inference.

Although the immediate motivation for conducting this survey was the desire to understand why so many of our own manuscripts have been rejected by these journals, we think the responses will be useful to all authors of statistical manuscripts, whether novice or seasoned.

For convenience, we divided the areas covered by the respondents into six broad categories, presented below with detailed suggestions. As both authors serve (or have served) as associate editors for *Statistics in Medicine*, we felt free to add our own suggestions here and there.

Context of Research and Motivation

These include the need to provide proper motivation for research with such critical elements as *alignment with existing literature*, *novelty*, and *applicability*.

- DO include a convincing and easy-to-follow real-world example illustrating the problem and motivating your research.
- DO conduct a thorough and unbiased literature review ensuring good alignment with existing research. This not only means the

paper should present novel approach(es), but it also should avoid inventing new terminology and introducing new notation when established ones exist. As in almost any area of human endeavor, a good strategy is to stick to existing standards unless you can propose better ones.

- DON'T include excessively long literature review, unless you are writing a review paper. Only cover literature relevant for your research.
- DON'T try to solve artificial or nonexisting problems. Always ask yourself, "Is the method proposed applicable to a real-life problem?" Artificiality comes with many faces. For example, do not do research just to provide a Bayesian counterpart to a problem where an existing (frequentist) solution works well. Often authors "invent" methods involving multiple steps that somewhat arbitrarily combine existing procedures with little insight into why they should work better than available methods.
- DON'T try to solve a special case when a more general problem has been solved already.
- DON'T try to publish two very similar papers with a different order of authors.
- DON'T write in the introduction that "unfortunately no approaches exist to handle this problem"; it is, in fact, quite fortunate for your research.

Structure and Style of Presentation

The key attributes are the *length*, *logical structure*, efficient use of *tables and figures*, use of *appendices*, and *supplemental materials*.

- DON'T write long manuscripts (stressed by one-quarter of responders).
- DO make sure the structure of the paper is well thought out. As our respondents did not

provide examples of poor structure, we would like to make a couple specific suggestions:

- Although clinical journal standards require you to not disclose results before the “results” section, keeping the reader in suspense, this pedantic rule is not followed by many influential statisticians of our time who often present the summary of key findings in the introduction.
- Do not write a history of your research, tracking how the ideas evolved in the course of writing your article. Present the final view.
- DO present information efficiently. Whenever possible, graphical summaries are preferred over tabular summaries (in addition, tables can be moved to the appendix).
- DON'T have an excessive number of tables and figures in the main text.
- DO provide detailed annotations for each figure that allow the reader to understand the graph (and the context), even without reading the description in the text. This is also helpful for automatic generation of article summaries, as machine learning algorithms “like” to have figures explained by surrounding text.
- DO present proofs and other highly technical details in appendixes.
- DO make sure the paper is proofread by a native English speaker.

Simulation Design

- DO make sure simulations cover *relevant* cases.
- DO explain in nontechnical language why you chose particular scenarios.
- DON'T choose only the scenarios that favor your method. Show how your method performs when the assumptions are not met.
- DON'T choose as a comparator for your method a “strawman” (a pseudo-standard that is easy to beat). Compare your method to a broad class of alternative approaches. In most settings, there is no method that is uniformly

better than all others, and it is important to identify the cases in which alternative methods are superior to your method.

- DON'T use simulations when you can make a point using an analytical argument.
- DON'T present results with nine decimal places, especially if you have run only 100 simulations per scenario.

Balancing Theory with Applications

- DON'T overload the paper submitted to an applied statistics journal with mathematical equations and statistical jargon. The main results should be explained using language understandable by an intelligent nonmathematically-oriented reader.
- DO provide intuition behind mathematical results.
- DO provide a real-life example (see also Context of Research and Motivation).

Properly Framing Your Contribution

- DON'T “oversell” and exaggerate the importance and novelty of your paper.
- DON'T write your paper like a promotional dossier explaining how everyone is doing things wrong and “here we come and solve all the world’s problems.”
- DO provide a critical account of your research, stating gaps and limitations. Stating limitations of the proposed method is important; however, admitting your sins does not automatically mean forgiveness.

Reproducibility

- DO describe methods in sufficient detail that can be reproduced.
- DO make the code and data sets available.

We would like to conclude this article with a DO (or rather a BE) suggested by one of our responders: “Be Brilliant!” ■

sectionnews

Survey Research Methods

The Joint Statistical Meetings (JSM)—taking place August 2–6—will be a virtual conference this year, and the Survey Research Methods Section (SRMS) has many sessions for you to attend from your home (or office).

Starting at 10 a.m. EDT, the technical program will extend over four days (there are a few events on Sunday, as well), including Thursday afternoon. SRMS has at least one invited session every day at 10 a.m. (10 total), 14 topic-contributed sessions, nine contributed sessions, four roundtables (free this

year), and one poster session. The virtual program is available at www2.amstat.org/meetings/jsm/2020/onlineprogram.

Registration, featuring reduced rates, will remain open through the conference. Register today!

Time to Think About JSM 2021 Invited Sessions

While JSM 2020 hasn't happened yet, it is not too early to organize your potential JSM 2021 invited session; proposals are due early in September.

Invited sessions include invited papers (2–6 presenters and/or discussants) and panels (3–6

panelists providing commentary about a topic). An invited session proposal includes a session title, general description of the session, list of participants, and tentative talk titles.

If you are interested in organizing an invited session, select a session topic and solicit potential speakers. Once you have a sufficient number of committed speakers, you can submit your proposal online from mid-July to early September. ■

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2021 CONFERENCE ON STATISTICAL PRACTICE

NASHVILLE, TENNESSEE ♥ FEBRUARY 18–20, 2021

PARTICIPATE

Poster Abstract Submission

July 9, 2020 –
August 19, 2020

ATTEND

Early Registration

September 30, 2020 –
January 7, 2021

Housing Opens

September 30, 2020

Regular Registration

January 8, 2021 –
February 20, 2021

Housing Closes

January 19, 2021

Do you use statistics and data science in your daily work solving real-world problems? Want to communicate and collaborate more effectively with nonstatisticians and hone your skills?

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Short courses, tutorials, and sessions are designed to sharpen a broad spectrum of necessary skills in the following areas:

- ♥ **Leadership**
- ♥ **Communication**
- ♥ **Data Management**
- ♥ **Study Design**
- ♥ **Career Development**
- ♥ **Data Analysis**
- ♥ **Collaboration**
- ♥ **Big Data**

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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.

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

Professional Opportunities vacancies also will be published on the ASA's website (www.amstat.org). Vacancy listings will appear on the website for the entire calendar month. Ads may not be placed for publication in the magazine only; all ads will be published both electronically and in print.


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>.

Florida

■ The Health Informatics Institute at the University of South Florida invites applications for an open-rank research faculty position in Biostatistics. The Institute is NIH-funded as a statistics and data coordinating center for several large clinical research networks (www.hii.usf.edu). Preferred areas of interest include longitudinal data analysis, clinical trials, and big data analytics. University benefits package, EOE. Apply to position 22377 or 24491 at Careers@USF.edu. EOE.



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and Biostatistics
School of Public Health

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Texas

■ Two full-time, 12-month postdoctoral fellow positions at the Statistics Department at Rice University or MD Anderson Cancer Center. Requirements: PhD degree in Statistics, Biostatistics, Applied Mathematics, Computer Science or related field; extensive experience with R and Python; modeling, multivariate data, statistical learning and working with big data. Applications accepted until the positions are filled - <https://jobs.rice.edu/postings/23335>. Rice University is an Equal Opportunity Employer with commitment to diversity at all levels and considers for employment qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national or ethnic origin, genetic information, disability, or protected veteran status. ■

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Key Dates for Participants

September 8, 2020
Invited Session Proposal Deadline

September 28, 2020
Continuing Education Course
Proposal Deadline

November 12 – November 18, 2020
Topic-Confined Session Proposal Submission

November 1, 2020 – February 3, 2021
General Abstract Submission

January 11, 2021
Computer Technology Workshop
Proposal Deadline

January 28 – April 7, 2021
Mathematical Proposal Submission

February 3 – April 11, 2021
Late-Breaking Session Proposal Deadline

May 11, 2021
Final Manuscript Deadline

Key Dates for Attendees

May 21, 2021
Registration/Attendance Open
(11 AM EST)

May 24, 2021
Early Registration Deadline

June 28, 2021
Regular Registration Deadline

July 1, 2021
Closing Deadline

August 7–12, 2021

Seattle Convention Center

www.amstat.org/education/jsm2021





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