May 2019 • Issue #503

AMSTATNEWS

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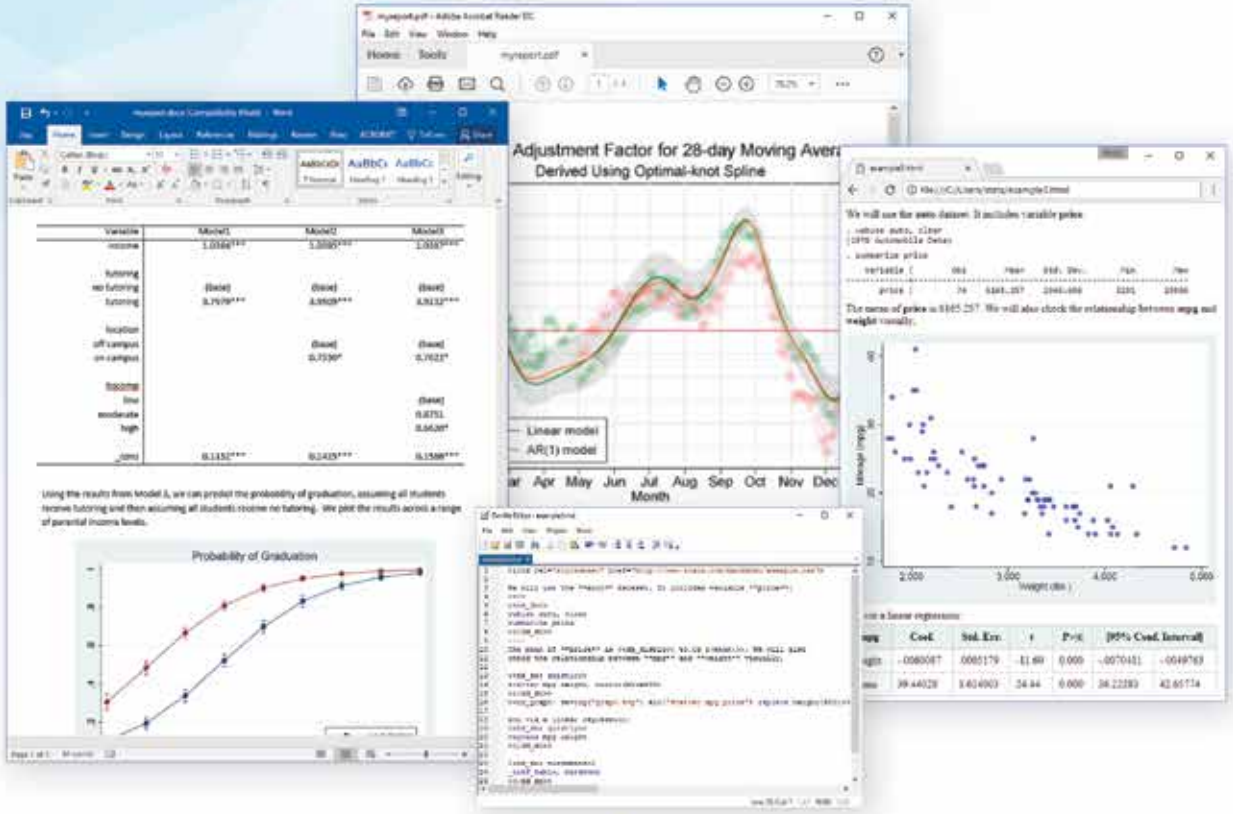

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AMSTATNEWS

MAY 2019 • ISSUE #503

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

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

features

Photo courtesy of VISIT DENVER

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columns

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*.

This column focuses on what statisticians do when they are not being statisticians. If you would like to share your pastime with readers, please email Megan Murphy, *Amstat News* managing editor, at *megan@amstat.org*.

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

What's Your Pastime?

Do you have a hobby outside of work you would like to share? If so, let us know and we'll feature it in an upcoming Pastimes of Statisticians column. Email Megan Murphy, *Amstat News* managing editor, at *megan@amstat.org* to receive a short questionnaire to complete. Return your answers along with photos of you participating in your leisure activity and we'll publish your story in an upcoming issue. View previous columns at *https://magazine.amstat.org/blog/category/columnnews/pastimes*.

'Don't Try for a Census'

Lyric © 2018
Lawrence M. Lesser

Inspired by the location of JSM 2019, Larry Lesser of The University of Texas at El Paso repurposed a #1 hit ("Annie's Song") by John Denver to teach how a sample survey can beat a census.

Don't try for a census
when the best thing's a sample.
But now how could a sample
surpass trying for all?
Well, samples are faster
(so less outdated data)
and samples are cheaper
(less workers to hire)!

Sometimes a census
simply can't even be done:
If you needed a blood test,
should they take some or all?
If they crash-tested all cars,
they'd have no cars to sell you!
Just take a sample
from what is mixed well.

If the sample's much smaller
than the whole population,
Then precision goals lean on
the sample size *n*,
Not the sampling fraction:
that is really amazing!
Don't try for a census,
come sample instead!

You can hear the song played at *www.causeweb.org/cause/resources/fun/songs/dont-try-census*.

departments

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Statistics for Data Science

Many years ago, I had the good fortune to benefit from my MS adviser's encouragement to pursue a PhD—and further benefit from his wide familiarity with many departments of statistics. I learned statistics departments varied in size (from tiny to large), emphasis (almost entirely theoretical, very applied, and somewhere in between), and placement of students (academe versus industry or government). And so it is with many fields: some departments of French include other languages, while others do not. Or some focus on 19th century literature versus existentialism. I suspect we will see the same diversity in data science programs.

The University of Virginia recently announced a large gift to start a school of data science. One of the first questions raised by the faculty was, "What exactly is data science?" One definition emerges from the National Science Foundation (NSF)–funded Transdisciplinary Research in Principles of Data Science (TRIPODS) projects, which bring together statistics, mathematics, and theoretical computer science. To this, I would add the subject-matter discipline for which the data were collected and the ethical foundations for appropriate use. (Ethics is an essential part of statistics, too. See *www.amstat.org/ASA/Your-Career/Ethical-Guidelines-for-Statistical-Practice.aspx*).

Most of us would agree the primary reason one collects data is to draw inferences and insights from it. So, our discipline plays a central role in data science, as many others have noted. But the relative contributions of mathematics, computer science, and statistics—and the disciplines of application—will inevitably shape the styles of departments or schools of data science. Just as statistics departments have distinguished themselves with different emphases, we can expect to see diversity develop in data science programs. In any data science program, however, statistics must play some role. Data science must include solid probabilistic and statistical foundations for drawing inferences from data. How much of a role?


Karen Kafadar

To help the ASA think about the possible roles and levels of integration of statistics and data science, the ASA Board of Directors last November recommended the creation of the Ad-Hoc Advisory Committee on Statistics and Data Science. This committee will be co-chaired by ASA Board member Mark Glickman and former ASA Board member Kathy Ensor. The committee's charge includes the development of recommendations and the creation of a plan for the ASA to interact with data science.

The members of the committee bring a wide range of talents and opinions. Some may think statistics departments are destined to become obsolete and should join data science programs now, while others may want to focus on welcoming data scientists into our discipline—just as we have welcomed mathematicians, epidemiologists, psychologists, political and social scientists, chemists, and all sorts of scientists into the statistical community.

The first question for the committee to address is: What are the unique contributions of statistics to data science? The committee's response to this issue may itself be valuable—if only to remind us that statisticians cannot afford to approach our discipline too narrowly, nor to train our students too narrowly.

I recently heard industry relies on data scientists to formalize the process from idea-conception to production of data-focused

Mark Glickman

Kathy Ensor

inventions. As John Tukey said, "*Finding the question is often more important than finding the answer*" (cited by D.R. Brillinger in the *Annals of Statistics,* 2002, p.1571). Isn't this thought process part of our training as statisticians, or have educators of statistics surrendered this thought process to data scientists?

Which route will our discipline take? Fifteen years ago, 2004 ASA President and renowned scientist Bradley Efron remarked at an ASA Board dinner, "People have been predicting the demise of statistics for years: First it was computer science, then it was artificial intelligence, then it was expert systems, then it was operations research … And guess what? We're still here." Would "data science" be in that list today? Or have we finally encountered the discipline that will ultimately lead to our demise?

Data science needs statistics, just as our discipline benefits from interactions with mathematics and computer science. If you have ideas for Mark Glickman and Kathy Ensor's Ad Hoc Advisory Committee on Data Science, please share them by emailing Donna LaLonde at *donnal@amstat.org* or Ron Wasserstein at *ron@amstat.org*.

I do not think so. As an example, J.H. Friedman, T. Hastie, and R. Tibshirani developed statistical foundations for boosting—a classifier proposed in the computer science literature—in "Additive Logistic Regression: A Statistical View of Boosting," published in the *Annals of Statistics*, 28:2, pp.337-407. Right now, Efron is preparing a talk in which he relates big data prediction algorithms, deep learning, etc., to classical statistics. Similar efforts by statisticians are underway.

I hope our discipline will not be subsumed into data science, but will retain its distinctiveness. Data science needs statistics, just as our discipline benefits from interactions with mathematics and computer science. The challenge for all of us is to recognize the potential "flavors" of data science programs that will develop and identify the ways in which we want to participate in those programs. Our members, and our statistical colleagues worldwide, have adapted well to change and recognized—and embraced—the diversity of directions our discipline has taken. I firmly believe we will do so here, as well.

More than 50 years ago, John Tukey was invited to give the commencement address to New Bedford High School (from which he would have graduated some 30 years earlier had he not been home-schooled). His remarks included the following:

> The Chinese have a curse: "May your children live in interesting times!" My parents, your parents, and most parents for the last and next few centuries have had—or will have—children who live in interesting times. That means there have been problems, there are problems, and there will be problems—many of them very serious.
>
> It was once fashionable to believe in progress and the near utopia that would soon be with us. Then it was fashionable to say that the world was horrible and getting much more so with inevitable rapidity. I tell you now that it is not true that problems will soon disappear—and equally not true that they will get much, much worse. They will change, which means that we will always be replacing familiar problems—problems that we know something about tackling—by new ones that we do not yet know how to deal with. The most painful things are not the problems, but the need to find new ways of thought, new things to be done, and new kinds of social organization. The need to change is ever painful, and it is the essential feature of interesting times.

Perhaps this is how "data science" arose—to tackle problems using different types of data to answer various questions. These are statistical problems that call for statistical approaches, with computer science and mathematics providing the tools. Coming up with new ways of thinking leading to possibly new approaches to address the uses of large databases is, as Tukey would say, the hard part—but this has always been the hard part. This is our job as statisticians.

StatFest 2019 to Take Place in Houston

StatFest 2019 is a free one-day conference for undergraduates that is meant to encourage historically under-represented students (e.g., African-American, Latino, Native American, Pacific Islander) with quantitative interests to pursue careers or graduate study in the statistical sciences. This year's event will take place September 21 and be hosted by the department of biostatistics and data science at The University of Texas Health Science Center at Houston.

The conference will feature a Friday evening reception, short presentation on networking, and other networking-related activities to help participants appreciate and develop interpersonal skills not formally taught in the classroom. In addition, students will be inspired by a keynote speaker and motivated by engaging panel discussions that explore opportunities in statistics and data science across government, academia, and industry. Undergraduate students will also have an opportunity to engage in a candid Q&A with a graduate student panel that explores the highs and lows of the graduate student experience, how to prepare for graduate school, and advice for succeeding in graduate school. Students conducting research will have an opportunity to put their work on display during the poster session.

Travel awards will be offered to a select group of registered students who are outside a 120-mile radius from Houston. Preference will be given to students who participate in the poster session.

The conference is an ongoing initiative of the American Statistical Association through its Committee on Minorities in Statistics (CoMiS). The committee seeks to foster participation in statistics by historically under-represented minorities in statistics. The committee focuses much of its effort on two key programs: StatFest, a pipeline program, and the Diversity Mentoring Program, an early-career success program.

Dionne Swift, CoMiS chair, says, "StatFest is a great opportunity for students to learn about different career opportunities in statistics and connect with professionals from under-represented groups. Hearing experiences of these career professionals can be tremendously motivating and may inspire students' educational and career plans."

Adrian Coles, StatFest planning committee chair, adds, "StatFest is more than an information-sharing session. It's about connecting students from under-represented groups to a broader community and to developmental opportunities outside of their institutions!"

More than 150 participants attended last year's conference at Amherst College. Approximately 47% were undergraduate students, 9% were graduate students, 6% were in transition, and 38% were professionals. Many of the professionals attended as representatives of their organizations in the exposition area, which provided student participants the opportunity to directly connect with graduate school representatives, hear about potential internships with government and industry, and learn about other career opportunities.

While the conference is free, registration is required. Visit the StatFest website at *https://community.amstat.org/cmis/events/statfest/statfest-2019* for more information and to register. ■

Brittney Baily and Dionne Swift during StatFest 2018

Participants mingle during StatFest 2018.

StatFest is made possible through the financial support of the ASA and several academic and industrial sponsors. If you have questions about StatFest, or if your organization is interested in supporting the event, contact Adrian Coles at *adrian.coles@lilly.com* or Adriana Pérez at *adriana.perez@uth.tmc.edu*.

We Love Data Competitions

Christian Lucero, Virginia Tech Department of Statistics

Students at Virginia Tech (VT) enjoy competing in the ASA DataFest every spring. This enthusiasm is shared by everyone involved, including the competitors, organizers, judges, and spectators. Chances are, many of you have similar feelings about this event and can share a number of anecdotes about your own experiences. However, I would like to take this opportunity to tell you more about our students and their passion for data science and data competitions in particular.

Shortly before I joined VT, a new major titled Computational Modeling and Data Analytics (CMDA) had just taken root on the Blacksburg campus. Prior to the existence of this program, students who were interested in data science took courses in mathematics, statistics, and computer science with the hope they could find the best set of complementary tools to help them in the information age with a role as a data scientist. This new major combines the essential elements from these majors into an integrated curriculum, including 10 new courses specially designed for the major. In just a handful of years, the enrollment has reached nearly 500 undergraduates, with many students double-majoring or minoring in statistics. Ultimately, with so many interested in data science, our students decided a single competition like the ASA DataFest was not enough; they simply wanted more. This led us to develop our own local competition, which is held in the fall semester.

After the 2017 ASA DataFest, the students who completed the event provided valuable feedback. Nearly every sentiment expressed was positive. For example, the participants overwhelmingly said they enjoyed learning a lot in a very short period of time. They were also excited to showcase their skills to their peers, the faculty, and the corporate sponsor representatives who served as judges for the event.

While there weren't many criticisms, there were two frequent complaints we thought possibly contributed to the competition's high dropout rate (about 40–60% each year of the initial 40+ teams). The first criticism involved the length of the competition, as many participants expressed that the 48-hour window can be overwhelming for first-time competitors. Second, those students who only knew a handful of data visualization techniques and classical statistical methods did not think they could compete with the more advanced students.

With these issues in mind, we set out to develop our own competition aimed at giving our students another opportunity to practice their skills while also providing a gentler introduction to data competitions.

On November 6, 2018, we wrapped up the second annual CMDA Fall Data Competition. The primary goal was to minimize the number of participants who dropped out while helping them bolster their confidence in presenting their work before their peers and judges. The format of the competition is as follows:

1. The competition lasts a full week. This allows students who have scheduling conflicts to find at least some amount of time to devote to the competition. This also allows students to learn new skills and consult with experts.

Interested in Data Competitions?

ASA DataFest (*ww2.amstat.org/education/datafest*) is a great place to start! If you would like to attract younger students, try Statsketball (*https://thisisstatistics.org/home-2/statsketball*), which is aimed at challenging high-school and undergraduate students to predict the outcome of NCAA basketball tournaments using statistics. Finally, the ASA hosts a biannual data exposition in which students submit a poster designed to highlight important aspects of a data set. Previous examples can be found at *http://stat-computing.org/dataexpo*.

2. There are two competition tracks: beginner and advanced. There is a different data set for each track. The beginners are expected to focus more on visualization methods and elementary statistical methods. The advanced participants typically use statistical learning methods and focus more on building models.

3. Presentations are given to each judge individually as they walk around in a tri-fold poster session. The judges have more dynamic interaction with the groups than the judges are able to with the presentation format of the ASA DataFest.

The new competition has been a hit with our students. The dropout rate has dropped to around 25–30% (now procrastination is identified as the primary factor). The biggest source of praise for this format involves the tri-fold poster session format. Students are able to discuss their work in much greater detail with all who want to listen. There is also a sense of camaraderie while groups take turns showcasing what they were able to accomplish during the week. Finally, the judges have expressed a fondness for this format, as they get a bit more time to absorb the thought process that went into the body of work in front of them. ■

THE AMERICAN STATISTICIAN HIGHLIGHTS

Group Testing, Randomized Testing, Leadership Featured in May Issue

Daniel Jeske, *TAS* Editor-in-Chief

The May 2019 issue of *The American Statistician* features 12 articles spanning a variety of topics.

The General section has five articles. One discusses group testing and includes an overview of the field while delving into constructing optimal designs. A second article introduces randomized testing to the context of non-negative distributions with zero clumping. Confidence intervals and point estimation based on randomized tests are also discussed. A third article considers Bayesian analyses of multinomial distributions with particular interest in how alternative priors have advantages and disadvantages for data with zero count categories. A fourth article formulates the two-sample t-test in a geometric framework and establishes connections between Student's t-distribution and Fisher-Student's central hypersphere h-distribution. The fifth article in this section discusses three keys to statistical leadership and includes illustrations from the drug development industry.

The Statistical Practice section has three articles. The first proposes a new incomplete block design motivated by a poster-judging application. The second article advances a new visual display that avoids pitfalls when using overlapping confidence intervals to make statistical inference. The last article develops a team-drafting strategy for fantasy basketball leagues based on a Bayesian analysis of a mixed-effects model.

There are two articles in Teacher's Corner. The first offers an alternative way to teach Bayes theorem that emphasizes how prior beliefs about the parameters are updated. The advantages of this approach are discussed, with the main one being is easier to see how the prior specification affects the updating. The second article is another look at tail formulas for higher moments of a non-negative distribution, with emphasis on discrete distributions.

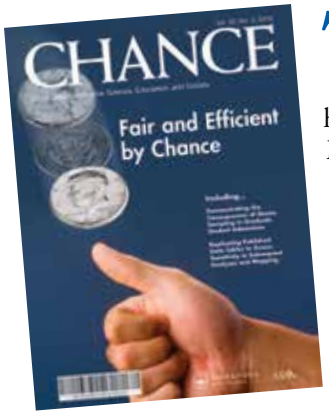
The issue also contains a short technical note that follows up on a recent *TAS* article about closed-form estimators for the parameters of a gamma distribution. The article in this issue presents alternative closed-form estimators with less bias.

The May issue concludes with an article in the Statistical Computing and Graphics section that introduces the use of ternary plots to visualize and interpret regression coefficients in a trinomial logistic regression model. ■

CHANCE HIGHLIGHTS

Can a Statistical Concept Help Solve Political Gridlock?

Scott Evans, *CHANCE* Editor-in-Chief



The United States has perhaps never been so entrenched in political gridlock. Negotiations over issues such as health care and immigration are at a stalemate. Might we look to a statistical concept to play a role in addressing these issues? Could randomness be part of the solution? Leonard Wapner discusses whether flipping a coin can help address the country's problems in "Fair and Efficient by Chance."

Graduate admission to STEM-related programs at universities in the United States often apply a quota system to ensure applicants from the United States are accepted when competing against a talented international pool of applicants. Paul Kvan discusses the implications of this in "Demonstrating the Consequences of Quota Sampling in Student Admissions."

Statisticians understand that point estimates should be accompanied by standard errors or the precision associated with such estimates. But, in many cases, tabular summaries are published without this information. Tom Krenzke and JianZhu Li describe an approach, "replicating tables," that allows sampling errors from a table based on the margins of error associated with numbers in the table to carry into analyses that use this information. An R function and Excel file can be used to implement the approach.

In our columns, Monika Hu shares a rewarding experience about teaching an upper-level undergraduate statistics course through a shared/hybrid model in Taking a Chance in the Classroom. Mine Çetinkaya-Rundel revisits teaching massive open online courses and what we have learned from them in Teaching Statistics in the Health Sciences. Nicole Lazar discusses crowdsourcing in the big data era in The Big Picture. Christian Robert reviews *The Beauty of Mathematics in Computer Science*, *IAQ*, *Let the Evidence Speak*, *Is That a Big Number*, and *Surprises in Probability–Seventeen Short Stories* in Book Reviews. Finally, Howard Wainer examines the work of Devah Pager in Visual Revelations and discusses her work on the relative effects of race and crime on employment.

Finally, have fun visualizing the connection between a box plot and the human face, thanks to Sarjinder Singh. ■

Be sure to reserve Saturday, September 28, for the next installment of the New England Symposium on Statistics in Sports (NESSIS), one of the pre-eminent research conferences on statistics in sports. For more information, visit *www.nessis.org*.

Workshop on Simulation and Statistics Planned for September

Salzburg, Austria
Photo Courtesy of Tourismus Salzburg

The 10th International Workshop on Simulation and Statistics (SimStat 2019) will take place September 2–6 at the University of Salzburg in Salzburg, Austria—the city of Mozart and *Sound of Music*.

Plenary lectures will be given by Edgar Brunner, Holger Dette, Regina Liu, Christian Robert, and Gerd Antes. Confirmed session topics include experimental design, data science and statistical learning, methods for multivariate and high-dimensional data, functional data, survival analysis, nonparametric statistics, algebraic methods in computational biology, statistics in forensics, neurology, and evidence-based medicine.

Session proposals are being accepted. Additionally, there will be a dedicated student poster session, and the ASA is cosponsoring students by picking up their registration fee. Students should register, submit an abstract, and make a note on the submission that they are students (PhD students welcome) and would like to participate in the competition for an ASA sponsorship.

For more information, visit *https://datascience.sbg.ac.at/SimStatSalzburg2019*. ■

Significance Research Briefs: Submissions Wanted

Significance is looking to introduce a regular feature that offers readers a curated list of recommended reading drawn from the pages of research journals; conference proceedings; and public and private sector reports, reviews, and white papers. To ensure recommendations cover a wide range of topics, interests, and areas of expertise, *Significance* is requesting briefs from its readership.

How will we use the briefs?
Three to four research briefs will be published in each print issue of *Significance*. Up to 10 additional briefs will be published online at *significancemagazine.com* to coincide with the publication of each print issue.

When should I send submissions?
Submissions are invited at any time. They will be kept on file to be used in the next available publication.

Details about how to submit a brief are on the *Significance* website at *www.significancemagazine.com/616*.

STATS4GOOD

Considering Ethical Best Practices in Data for Good Projects

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

At the ASA's recent Conference on Statistical Practice, I had the opportunity to speak on a panel discussing ethics. Organized by ASA President-elect Wendy Martinez, the panel was well received, and a group has begun work on future events.

While my presentation recommended Data for Good as one dimension of the work of the ethical statistician, most of the conversation was around data privacy. I was there to talk about when things go right, while my colleagues addressed the pressing need to work out what happens when things go wrong.

These twin concerns—best practices for good and worst practices that do harm—are not entirely separate. As statisticians and data scientists seek opportunities to do good, ethical best practices will become second nature.

This month's column is an opportunity and invitation to engage in discussions about ethical best practices, both in general and specifically in the context of Data for Good. These thoughts are offered, then, not as answers but as conversation starters—something for all of us to think about and discuss.

Of course, researchers always will want to employ best practices for the ethical use of data. Ethical considerations in Data for Good studies can include the following:

- Informed consent for the use of privately obtained data
- Data use consistent with the purposes stated at the time of collection
- Transfer of data to third parties, including government, law enforcement, and other agencies serving the people affected
- Data security
- Data retention
- Data ownership

While ethical practices are a concern for any statistician, the circumstances and context of Data for Good projects highlight particular concerns. Just as one example, banding birds to track them across future studies is one thing; tracking domestic violence or human trafficking victims across multiple databases—including advocacy groups, service providers, and law enforcement—is quite another! One important question is data ownership, which can be complex in our projects.

For example, suppose a news media organization interviews the family of a crime victim and publicly disseminates the report. A Data for Good researcher captures this public report as part of an epidemiological study of that particular type of crime. In this instance, claims to the ownership of the data contained in the news report could be made by the victim, the family, the reporter, the media service, the perpetrator, and the general public.

Get Involved

Gartner Research has put together a great Data for Good web page with a list of organizations, cases studies, and other resources (*www.gartner.com/doc/3880666/use-data-good-impact-society*). This is a page people will definitely want to see.

Also, as students heading home for the summer, is participating in Data for Good part of your plans? D4G offers the opportunity to take what you have been learning in the classroom and apply it to real-world problems. One good way to start is talking with people at organizations with which you are already connected. Maybe it's an animal shelter, community organization, or sports group. Find a place where you are connected already and ask how your statistical skills can be used to make a difference for good.

To help start a conversation, following are practices that could be recommended as part of the researcher's data governance practices supporting ethical use of personally identifying data used in Data for Good projects:

- Follow all applicable laws and regulations.
- Encrypt all data with the potential to identify individuals, either alone or in connection with other data, at rest and in motion.
- Establish a retention policy and record the date the data were captured.
- Avoid making unnecessary copies of the data.
- Treat publicly available sources of data that may be used for purposes of identification in the same manner as privately sourced data.
- Focus on creating security standards and practices that meet the reasonable expectations of the persons whose data are collected. Compliance with applicable laws is necessary, but may not be sufficient to support ethical practice in all cases.

Storage and use of personal, highly sensitive data require adherence to all applicable laws. Above and beyond legal requirements, the focus in ethical use of data should be on security of personally identifying data and use consistent with the informed reasonable expectations of data owners. Governance recommendations for ethical use further include informed consent, including research purposes and access, use consistent with the purposes stated to stakeholders when the data are obtained, strong data security, encryption in motion and at rest, and adherence to a clearly stated data retention policy.

Another consideration for ethical best practices is that changing technology brings new situations. Ethical questions about the use of data aren't like some math problems that can be solved and be done. As times, tools, and applications change, new questions need to be addressed. In this ongoing challenge, project directors and principal investigators may want to review older databases to ensure the purposes stated and agreed to at the time of data collection are consistent with new uses.

In modeling ethical best practices, the entire Data for Good community—professionals, students, and volunteers—all need to play a central role. As people striving for the well-being of others, D4G researchers must be advocates and role models for others to see and follow. Just as we are helping to shape the public image of statistics, the Data for Good community is called to be at the forefront of developing ethical practices; asking the hard questions; and advocating for data privacy, security, informed consent, and use consistent with permissions given.

How do we go about doing this? Let's start the conversation… ■

The American Statistical Association
Health Policy Statistics Section

2020 HPSS ACHIEVEMENT AWARDS CALL FOR NOMINATIONS

The HPSS achievement awards honor individuals who have made significant contributions to the development of statistical methods or have developed innovative statistical applications for health care policy or health services research.

The HPSS Mid-Career Award recognizes leadership through methodological or applied work and the promise of continued excellence. Candidates must be within 15 years of their terminal degree on January 1, 2019. The 2018 winner was Anirban Basu (University of Washington).

The HPSS Long-Term Excellence Award recognizes significant contributions to the profession through mentoring and service. Candidates must be 15 or more years from their terminal degree on January 1, 2019. The 2018 winners were Sally C. Morton (Virginia Tech) and Paul R. Rosenbaum (University of Pennsylvania).

These awards will be presented at the International Conference on Health Policy Statistics (ICHPS), January 6-8, 2020, in San Diego, California. For more information, see *ww2.amstat.org/meetings/ichps/2020.*

Please include a two-page nomination letter, the nominee's CV, and contact information for both the nominee and nominator. Additional independent letters of support may be included but are not required.

Nominations must be submitted by midnight EDT on Friday, August 9, 2019, to *HPSSAwards2020@gmail.com*.

PASTIMES OF STATISTICIANS

What Does **Chris Franklin** Like to Do When She Is Not Serving as ASA's K–12 Statistical Ambassador?

Christine Franklin
Photo by Eric Sampson/ASA

Who are you, and what is your statistics position?

I am currently serving as the ASA K–12 Statistical Ambassador. I am an advocate for promoting statistical literacy and reasoning at the school level. Most of my academic career was spent focusing on teaching, writing, research, and professional service in statistics education at the K–16 level.

I retired from the University of Georgia in 2016 after 36 years as faculty in statistics at the post-secondary level. I have been fortunate to enjoy every day of my career and to collaborate with amazing colleagues and mentors who inspired me to keep statistics education as a priority for our profession.

Tell us about what you like to do for fun when you are not being a statistician.

I am passionate about running, reading mystery novels, attending and scoring baseball games, and my favorite hobby: hiking and backpacking.

What drew you to this hobby, and what keeps you interested?

I grew up on a farm near the mountains of NC and have always been an avid outdoors person. In high school, I started discovering the joys of hiking and backpacking, especially on the Appalachian Trail. When my husband, Dale, and I married, we spent four weeks driving across the US, visiting national parks and national forest areas and camping, hiking, and backpacking. My 'wedding trip' was spent sleeping on the ground in a tent. As our two boys (Corey and Cody) became part of the family, through their growing up years, many family vacations centered on hiking and backpacking. Both of my sons became involved with scouting, starting out as Tiger Cubs. They advanced through the ranks of Cub Scouting, then joined the Boy Scouts and both earned the rank of Eagle Scout.

A big component of scouting is hiking and backpacking, and the dream place for hiking and backpacking is Philmont, New Mexico. When crews are selected to take a 10-day backcountry trek in Philmont, the crews consist of several scouts and 2–4 adult leaders. Dale and I both served as adult leaders for different treks through the years our sons were part of crews.

The preparation for these treks began a year in advance, with the crews taking pre-hikes (for us, mostly on the Georgia part of the Appalachian Trail). The crews learned how to work together as a team with cooking, putting up bear bags, packing backpacks, and physically getting into shape. It is a commitment to make a trek to Philmont. The treks I have taken ranged from 75–90 miles over the 10 days.

I first went to Philmont in 2004 and then again in 2006 with all male scouts and my older son, Corey, as part of the crews. In 2012, I went as the only female adult leader in a venture scout crew—both male and female scouts. This trip was special for two reasons: having female scouts as part of the crew and having both my sons as part of the crew. I treasure the photo of me with my sons on top of Baldy Mountain at over 12,000 feet—the highest point in Philmont.

This third trip was also memorable because I became ill the day we arrived at Philmont; I experienced hyponatremia, or 'water intoxication.' I was hospitalized that night. Fortunately, I convinced the doctors to release me the next day, although I was quite weak. The crew left that day for the trail. I witnessed a crew coming together to take care of one of its members; they took my backpack and distributed my belongings to carry in their packs so I would have little weight to carry. They did this the first three days of hiking, until I gained back my strength.

My fourth trip to Philmont was to happen in June 2018. Dale and I volunteered to serve as adult leaders for another venture crew (four females and one male). This would be the first time Dale and I hiked in Philmont together on the same trek and

Christine Franklin with her sons, Corey and Cody, at Philmont, New Mexico, in 2012
Photo Courtesy of Christine Franklin

Christine Franklin at Yellowstone in 2018
Photo Courtesy of Dale Green

without either one of our boys as part of the crew. After preparing for a year and excitedly anticipating a return trip to Philmont, we received word that Philmont was canceling all the summer 2018 treks due to the wildfires. The crew quickly made the decision to still go west; we were a team that had prepared for this adventure and we would figure out an alternative.

We decided to travel to Yellowstone National Park. We had no reservations and it was too late to obtain them, but we decided we would go and take everything day by day. The trip turned out to be one of the most thrilling and gratifying 10-day hiking and backpacking trips I have experienced. The Yellowstone rangers and workers were extremely helpful in assisting the crew with getting the necessary permits. And the scouts stepped up in the leadership department as they planned each day as it came.

Hiking and backpacking (and running) is a part of my core being. These hobbies keep me connected to the outdoors. I have experienced incredible places all over the world that can only be accessed by going into the backcountry. I look forward to the physical challenges; it keeps me young. It is magical to go off the grid, focused on nature and coexisting with others, often for days at a time. The greatest reward is the camaraderie and long-lasting bonds built among the fellow hikers, especially the scouts throughout the years. These friendships are irreplaceable. ■

STAT*tr@k*

New to JSM? Read This Before You Go

Christopher Bilder is a professor in the department of statistics at the University of Nebraska-Lincoln and a fellow of the ASA.

The largest congregation of statisticians in the world happens every August during the Joint Statistical Meetings (JSM). More than 6,000 people attend these meetings, which are sponsored by 12 statistical societies, including the American Statistical Association. The meetings offer a variety of activities such as attending research presentations, interviewing for jobs, taking professional development courses and workshops, and browsing the exhibit hall. With so many opportunities, new attendees can be overwhelmed by their first JSM experience.

Based on my familiarity with attending meetings over the last 19 years and the experiences of student groups I have led, I'm going to provide some tips for getting the most out of JSM. If you would like to share your own recommendations, I encourage you to submit a comment below.

Before JSM

Most new attendees who choose to present their research do so in a contributed session via an oral or poster presentation. The deadline to submit an abstract for acceptance into the program was in early February. For those who did this, additional proof of progress (e.g., drafts of a paper) for the presentation must be submitted by mid-May.

A preliminary program listing the presentation schedule is now available (*ww2.amstat.org/meetings/jsm/2019/onlineprogram/index.cfm*). Because there may be more than 40 concurrent presentations at any time, it is best to arrive at JSM with an idea of which you want to attend. This can be done by examining the session titles and performing keyword searches in the online program prior to JSM.

Oral presentations are separated into invited, topic-contributed, and contributed sessions, with each session lasting 1 hour and 50 minutes. Invited and topic-contributed sessions include groups of related presentations submitted together and selected by JSM Program Committee members. These presentations each last for 25 or more minutes for invited and 20 minutes for topic-contributed. Contributed sessions include groups of 15-minute oral presentations. Unlike invited and topic-contributed sessions, contributed presentations are submitted individually and then grouped by JSM Program Committee members.

Poster presentations are also separated into invited, topic-contributed, and contributed sessions, with the majority in contributed sessions. These types of presentations involve speakers being next to their displayed poster and available for questions during the entire session. Most posters are of the traditional paper format, but an increasing number are in an electronic format paired with a four-minute oral presentation. For this combination of presentation types, the oral portion is given first in what is known as a "speed" session. A few hours later, the corresponding electronic poster presentation takes place.

Online registration for JSM begins around May 1. For members of a sponsoring statistical society, the cost is $465 during the early registration period. The cost increases to $565 if you register at JSM.

Registration for student members is only $130, and this rate is available at any time. Also starting around May 1, you can reserve a hotel room through the JSM website. A number of hotels near the convention center are designated as official conference hotels, and they discount their normal rates. However, even with a discount, you can expect

Exterior shot of the big blue bear at the Colorado Convention Center
Photo courtesy of VISIT DENVER

to pay $200 or more per night for a room.

Attending JSM can be expensive. Students have several options to reduce the cost burden. First, ask your adviser or department for funding. Many departments offer financial support for students who present their research at JSM. Students also may qualify for funding from the student activities office on their campus. For example, when I was a student, my department's statistics club received funding this way, which paid for most of my first JSM expenses.

In addition to school-based resources, many ASA sections sponsor student paper competitions that provide travel support to winners. For example, the Biometrics Section sponsors the David P. Byar Young Investigators Award, with $2,000 awarded to the winner and separate $1,000 awards given to authors of other outstanding papers. Most competitions require a completed paper to be submitted *many months prior to JSM*.

At JSM

JSM begins with Professional Development courses on a Saturday in late July. Business casual clothing is the most prevalent attire, but some attendees wear suits and others wear T-shirts and shorts. When you arrive at JSM, go to the registration counter at the convention center to pick up your name badge (if not already mailed to you) and additional conference materials.

There is a significant online presence during JSM. A major resource is the JSM app and online program. Both contain all the information you need, including a convention center map. Also, the ASA posts the most up-to-date news about JSM through its Twitter (@AmstatNews) and Facebook accounts. Attendees at JSM can use #JSM2019 to tag their JSM-related posts.

To welcome and orient new attendees, the JSM First-Time Attendee Orientation and Reception is scheduled for early Sunday afternoon. At this

New to JSM? Docents will be there to help. You will find them at JSM wearing an orange button, and they will be at the First-Time Attendee Orientation and Reception to answer any questions you may have. Visit *ww2.amstat.org/meetings/jsm/2019/moretodo.cfm* for more information.

reception, docents will be present (identified with a special orange button by their name badge) to answer any questions you may have about the meetings. These docents will be available throughout the conference as well.

On Sunday evening, the Opening Mixer will be held in the exhibit hall. This event is open to all attendees, and drinks and hors d'oeuvres will be served.

The main sessions start Sunday at 2:00 p.m. Many of the research presentations are difficult to understand completely. My goal for a session is to have 1–2 presentations in which I learn something relevant to my teaching or research interests. This may seem rather low, but these items add up after attending many sessions.

For attendees who teach introductory courses, the sessions sponsored by the ASA Section on Statistical Education are often the easiest to understand. Many share innovative ideas about how to teach particular topics.

Introductory overview lectures are another type of session with easier-to-understand topics. Recent lectures have included introductions to variable selection, statistical learning, and quantile regression. There are also many Professional Development courses and workshops available for an additional fee. However, you can attend a course for free by volunteering prior to JSM to be a monitor. Monitors perform duties such as distributing and picking up materials during the course. As an added benefit, monitors can attend one additional course for free without any duties. Those who are interested should contact Rick Peterson at *rick@amstat.org*.

Featured talks at JSM are usually scheduled for late afternoon on Monday through Wednesday. On Tuesday evening, the ASA president's address is given, along with an introduction to the new ASA fellows and recognition of many award winners. The fellow's introduction is especially interesting because approximately 60 ASA members (<0.33% of all members) are recognized for their contributions to the statistics profession.

In addition to presentations, the JSM exhibit hall features more than 90 companies and organizations showing their products and services. Many exhibitors give away free items (e.g., candy, pens, etc.). All the major statistics textbook publishers and software companies also are there. Textbook publishers usually offer a discount on their books during JSM and often for a short time after. The exhibit hall also includes electronic charging stations and tables that can be used for meetings. Additionally, it's the location for poster presentations and Spotlight, where you can get a small taste of the city JSM is taking place in.

The JSM Career Service provides a way for job seekers and employers to meet. Preregistration is required, and the fee is discounted if you register before mid-July. The service works by providing an online message center for job seekers and employers to indicate their interest in each other. Once a common interest is established, an interview can be arranged for during the meetings.

Other activities at JSM include the following:

- Shopping at the ASA Store to purchase a statistics-themed T-shirt or mug
- Attending an organized roundtable discussion during breakfast or lunch about a topic of interest (pre-registration is required)
- Taking a little time off from JSM for sightseeing or attending a sporting event

After JSM

JSM ends in the early afternoon on Thursday. Don't let what happens at JSM stay at JSM! The first thing I do after the meetings is prepare a short review of my activities. Using notes I took during sessions, I summarize items from presentations I want to examine further. I also summarize meetings I had with individuals about research or other important topics. Much of this review process starts at the airport while waiting for my return flight.

If you give a presentation at JSM, you may submit a corresponding paper to be published in the conference proceedings. Papers are not peer-reviewed in the same manner as for journals, but authors are encouraged to have others examine their paper before submission. The proceedings are published online around December. Authors retain the right to publish their research later in a peer-reviewed journal. ■

MWM
Meeting Within a Meeting

a statistics workshop for math and science teachers

www.amstat.org/education/mwm

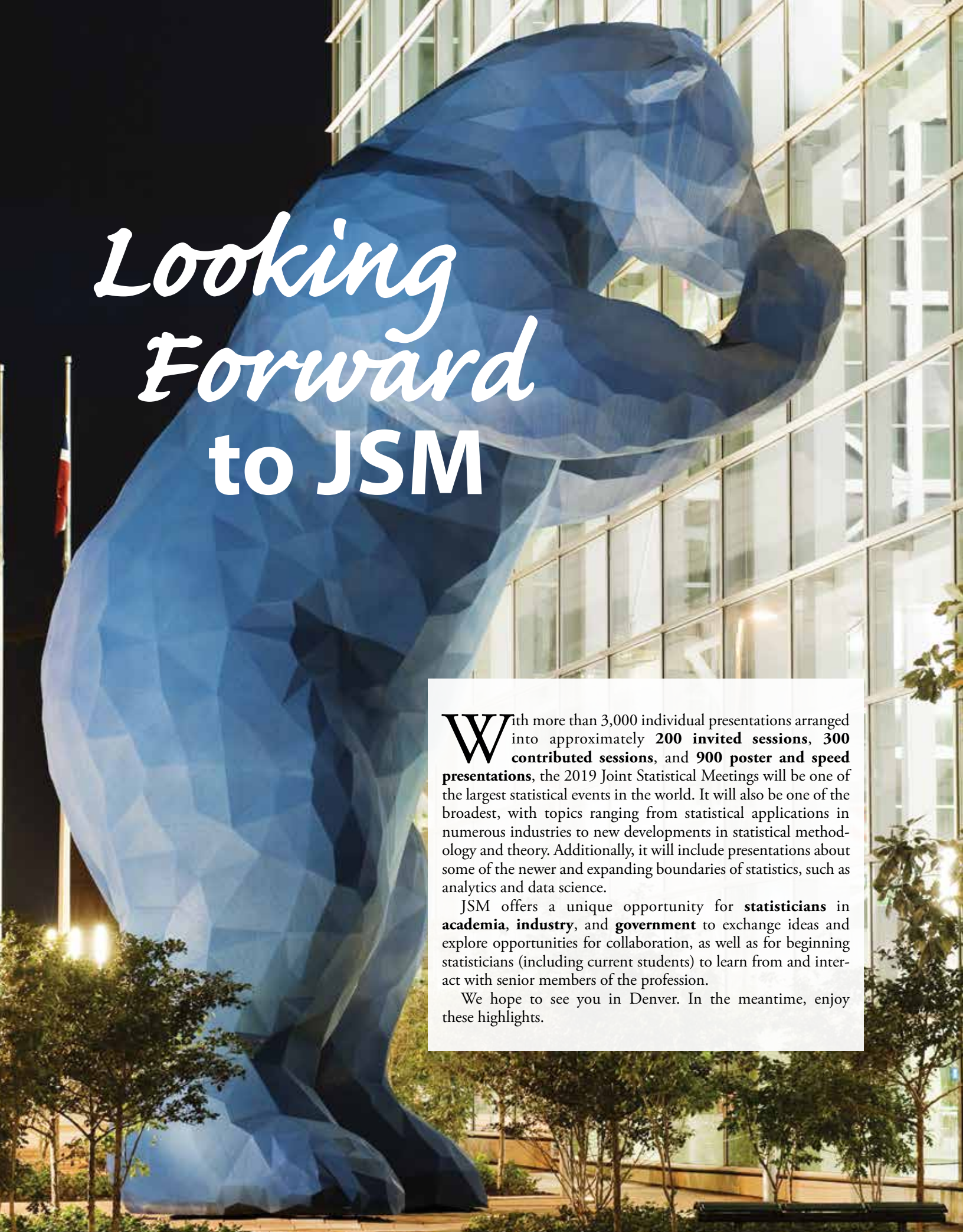
Based on the Common Core State Standards for Mathematics (***corestandards.org***) and *Guidelines for Assessment and Instruction of Statistics Education (GAISE): A Pre-K–12 Curriculum Framework* (***www.amstat.org/education/gaise***)

Dates:	Tuesday, July 30, and Wednesday, July 31, 2019, 8:00 a.m. to 4:00 p.m.
Place:	Joint Statistical Meetings, Denver, Colorado (meeting room TBD)
Audience:	Middle- and high-school mathematics and science teachers. Multiple mathematics/science teachers from the same school are especially encouraged to attend.
Objectives:	Enhance understanding and teaching of statistics within the mathematics/science curriculum through conceptual understanding, active learning, real-world data applications, and appropriate technology
Content:	Teachers will explore problems that require them to formulate questions and collect, organize, analyze, and draw conclusions from data and apply basic concepts of probability. The MWM program will include examining what students can be expected to do at the most basic level of understanding and what can be expected of them as their skills develop and their experience broadens. Content is consistent with Common Core standards, *GAISE* recommendations, and *NCTM Principles and Standards for School Mathematics*.
Presenters:	*GAISE Report* authors and prominent statistics educators
Format:	Middle-school and high-school statistics sessions Activity-based sessions, including lesson plan development
Provided:	Refreshments Handouts Certificate of participation from the ASA certifying professional development hours Optional graduate credit available
Cost:	The course fee for the two days is $50. **Please note:** Course attendees do not need to register for the Joint Statistical Meetings* to participate in this workshop.
Follow up:	Follow-up activities and webinars (***www.amstat.org/asa/education/K-12-Statistics-Education-Webinars.aspx***) Network with statisticians and teachers to organize learning communities
Registration:	More information and online registration is available at ***www.amstat.org/education/mwm***. Space is limited. If interested in attending, please register as soon as possible.
Contact:	Rebecca Nichols, ***rebecca@amstat.org***; (703) 684-1221, Ext. 1877

* The Joint Statistical Meetings are the largest annual gathering of statisticians, where thousands from around the world meet to share advances in statistical knowledge. The JSM activities include statistics education sessions, posters sessions, and the exhibit hall.

Sponsored by

ASA



Looking Forward to JSM

With more than 3,000 individual presentations arranged into approximately **200 invited sessions**, **300 contributed sessions**, and **900 poster and speed presentations**, the 2019 Joint Statistical Meetings will be one of the largest statistical events in the world. It will also be one of the broadest, with topics ranging from statistical applications in numerous industries to new developments in statistical methodology and theory. Additionally, it will include presentations about some of the newer and expanding boundaries of statistics, such as analytics and data science.

JSM offers a unique opportunity for **statisticians** in **academia**, **industry**, and **government** to exchange ideas and explore opportunities for collaboration, as well as for beginning statisticians (including current students) to learn from and interact with senior members of the profession.

We hope to see you in Denver. In the meantime, enjoy these highlights.

Featured Speakers

ASA President's Invited Address

Teresa A. Sullivan
President Emerita of the University of Virginia

Monday, July 29, 4:00 p.m.

ASA President's Address and Awards

Karen Kafadar
University of Virginia

Tuesday, July 30, 8:00 p.m.

Keep up to date with the latest JSM information. Follow @AmstatNews on Twitter and use #JSM2019.

Deming Lecture

Nicholas Fisher
University of Sydney

"Walking with Giants: A Research Odyssey"

Tuesday, July 30, 4:00 p.m.

This lecture describes a statistical research journey interwoven DNA-like with a series of encounters with great names in the development of improved management practices since the Second World War. The research journey—which still continues—relates to developing a systematic statistical approach to problems of performance measurement and touches on such seemingly disparate issues as board reporting, measuring and monitoring safety culture, rating the research quality of university departments, strategic planning, and the efficient and effective delivery of government programs. The great names—those of people whose work has transformed whole industries and countries—include William Cleveland, W. Edwards Deming, Ray Kordupleski, Richard Normann, Homer Sarasohn, Myron Tribus, Yoshikazu Tsuda, and Norbert Vogel.

COPSS Awards and Fisher Lecture

Paul Rosenbaum
University of Pennsylvania

"An Observational Study Used to Illustrate Methodology for Such Studies"

Wednesday, July 31, 4:00 p.m.

A natural experiment in health outcomes research is used to frame a discussion of statistical methods for causal inference in observational studies. A narrative description of the study's design, analysis, and reception is interrupted twice, first to describe algorithmic developments in optimal matching in design and, second, to describe analyses that inform discussions of unobserved biases due to the absence of randomized treatment assignment. Specific topics include fine balance constraints imposed on minimum distance matched samples, sensitivity analyses when treatment effects are heterogeneous, and design sensitivity as a tool to evaluate study designs and analytical techniques.

DATA ART SHOW

BACK BY POPULAR DEMAND! Explore the "art" in data art in the JSM gallery featuring data artists. Located inside the exhibit hall, this feature will explore the relationship between data and art.

Opposite page: The 2019 Joint Statistical Meetings will be held at the Colorado Convention Center, 700 14th St., Denver, CO 80202. Photo courtesy of VISIT DENVER. Photo by Scott Dressel-Martin.

Medallion Lecture I

Yee Whye Teh
Department of Statistics, University of Oxford

"On Statistical Thinking in Deep Learning"

Sunday, July 28, 4:00 p.m.

In recent years, machine learning and, in particular, deep learning has undergone tremendous growth, much of this driven by advances that are computational in nature, including software and hardware infrastructures supporting increasingly complex models and enabling use of increasingly intense compute power. As a result, the field is becoming more computational in its nature. In this talk, I would like to highlight the continuing importance of statistical thinking in deep learning by drawing examples from my research blending probabilistic modelling, Bayesian nonparametrics, and deep learning. In particular, I will talk about neural processes, which use neural networks to parameterize and learn flexible stochastic processes to use for meta-learning (also known as learning to learning), and the use of probabilistic symmetries in answering recent questions about neural network architecture choices satisfying certain invariance properties.

JSM registration opened May 1. Visit *ww2.amstat.org/jsm* to find out more today!

Medallion Lecture II

David Dunson
Duke University

"Learning and Exploiting Low-Dimensional Structure in High-Dimensional Data"

Monday, July 29, 8:30 a.m.

This talk will focus on the problem of learning low-dimensional geometric structure in high-dimensional data. We allow the lower-dimensional subspace to be nonlinear. There are a variety of algorithms available for "manifold learning" and nonlinear dimensionality reduction, mostly relying on locally linear approximations and not providing a likelihood-based approach for inferences. We propose a new class of simple geometric dictionaries for characterizing the subspace, along with a simple optimization algorithm and a model-based approach to inference. We provide strong theory support in terms of tight bounds on covering numbers, showing advantages of our approach relative to local linear dictionaries. These advantages are shown to carry over to practical performance in a variety of settings, including manifold learning, manifold denoising, data visualization (providing a competitor to the popular tSNE), and classification (providing a competitor to deep neural networks that requires fewer training examples). We additionally provide a Bayesian nonparametric methodology for inference, which is shown to outperform current methods such as mixtures of multivariate Gaussians.

Wald Lectures

Trevor J. Hastie
Stanford University

"Statistical Learning with Sparsity"

Wald I: Monday, July 29, 10:30 a.m.
Wald II: Tuesday, July 30, 2:00 p.m.
Wald III: Wednesday, July 31, 10:30 a.m.

This series of three talks takes us on a journey that starts with the introduction of the lasso in the 1990s and brings us up to date on some of the vast array of applications that have emerged.

I: We motivate the need for sparsity with wide data and then chronicle the invention of lasso and the quest for good software. Several examples will be given, culminating with lasso models for polygenic traits using GWAS. We end with a survey of active areas of research not covered in the remaining two talks.

II: Matrix completion re-emerged during the Netflix competition as a way to compute a low-rank SVD in the presence of missing data and imputing missing values. We discuss algorithms and aspects of this problem and illustrate its application in recommender systems and modeling sparse longitudinal multivariate data.

III: The graphical lasso builds sparse inverse covariance matrices to capture the conditional independencies in multivariate Gaussian data. We discuss this approach and extensions and then illustrate its use for anomaly detection and imputation. We also discuss the group lasso, with applications in detecting interactions and additive model selection.

Medallion Lecture III

Helen Zhang
University of Arizona

"Breaking Curse of Dimensionality in Nonparametrics"

Monday, July 29, 2:00 p.m.

Curse of dimensionality refers to sparse phenomena of high-dimensional data and associated challenges in statistical analysis. Traditional nonparametric methods provide flexible modeling tools to discover nonlinear and complex patterns in data, but they often experience theoretical and computational difficulties when handling high-dimensional data. Over the past two decades, rapid advances have occurred in nonparametrics to break the curse of dimensionality. A variety of state-of-the-art nonparametric methods, theory, and scalable algorithms have been developed to extract low intrinsic dimension from data and accommodate high-dimensional data analysis more effectively. In this talk, I will survey recent works of nonparametric methods in model estimation, variable selection, and inferences for high-dimensional regression, classification, and density estimation problems. Related issues and open challenges will be discussed as well.

IMS Presidential Address and Awards Ceremony

Xiao-Li Meng
Harvard University

"011, 010111, & 011111100100"

Monday, July 29, 8:00 p.m.

Human intelligence is increasingly being challenged by the artificial one it created. We are confused and troubled by what AI can, should, or will do, or even by its meaning (Michael Jordan, Harvard DS Review). Performance-driven methods are becoming more popular, be they labeled as AI, ML, or DS. Yet procedures without theoretical insights on how, why, and when they work are a frustration of our profession. Deep learning without deep understanding highlights the dilemma. Are we out of depth, out of imagination, or simply out of breath? How do we cultivate and inspire more "deep minds" for our profession to turn our collective frustration into fruition? Where is our "3-Body Problem" to push beyond our current asymptopia for imagination? Or if three is too small a number for the big data frenzy, what are our "Hilbert's 23 Problems" to refuel our deep (re)search of principles? You don't need a deep mind to decipher my title, but we need a theoretical revolution no smaller than the calculus revolution to form a 2020 vision to realize what it implies. I dare say such a revolution is well underway. The question remains: Do you want to be Newton or Leibnitz?

FEATURED EVENTS

Sunday, July 28

First-Time Attendee Orientation and Reception
12:30 p.m. – 2:00 p.m.

JSM Opening Mixer and Invited Poster Session
8:30 p.m. – 10:30 p.m.

Monday, July 29

ASA President's Invited Address
4:00 p.m. – 5:50 p.m.

JSM Student Mixer
6:00 p.m. – 8:00 p.m.

Korean International Statistical Society Annual Meeting
6:00 p.m. – 7:30 p.m.

International Indian Statistical Association General Body Meeting and Reception
6:00 p.m. – 8:00 p.m.

IMS Reception Following the IMS Presidential Address and Awards Ceremony
9:30 p.m.-11:00 pm.

Tuesday, July 30

Statistical Society of Canada Reception
5:30 p.m. – 7:00 p.m.

ASA President's Address and Awards
8:00 p.m. – 9:30 p.m.

JSM Dance Party
9:30 p.m. – Midnight

Wednesday, July 31

International Chinese Statistical Association Annual Members Meeting
6:00 p.m. – 9:00 p.m.

Rietz Lecture

Yoav Benjamini
Tel Aviv University

"Selective Inference: The Silent Killer of Replicability"

Tuesday, July 30, 10:30 a.m.

The replicability problems across varied scientific disciplines have attracted increasing attention in the last two decades. Unadjusted inference on the few promising ones, selected as such, is a major source of the problems. There are a few strategies for addressing such selective inference, which will be reviewed, and many related methodologies, which will not. Unfortunately, the problem is ignored in many important and highly visible areas of science. After presenting this background, the talk will focus on two specific issues: a less trodden strategy, that of offering simultaneous inference on the selected, and a methodology, that of addressing selective inference in a hierarchical system of inferences. I shall describe recent results on these two, as well as open questions. Returning to science at large, inference on hierarchical systems will be used to address the problem of selective inference when a database is interrogated by different investigators.

Free Public Lecture

Mark Glickman
Harvard University

"Data Tripper: Distinguishing Authorship of Beatles Songs Through Data Science"

Sunday, July 28, 6:00 p.m.

The songwriting duo of John Lennon and Paul McCartney, the two founding members of the Beatles, have composed some of the most popular and memorable songs of the last century. Despite having authored songs under the joint credit agreement of Lennon-McCartney, it is well-documented that most of their songs or portions of songs were primarily written by exactly one of the two. Some Lennon-McCartney songs, such as "In My Life," are actually of disputed authorship—both Lennon and McCartney individually remembered having written the music. Can data science shed any light on resolving such disputes? This talk explores how statistics can be used to classify musical style, learn features that are distinct to particular songwriters, and ultimately address how to predict who wrote a song of disputed authorship. This talk requires no mathematical or statistical background to attend and will be accompanied by musical demonstrations.

Medallion Lecture IV

Elizaveta Levina
University of Michigan

"Hierarchical Communities in Networks: Theory and Practice"

Wednesday, July 31, 8:30 a.m.

Community detection in networks has been extensively studied in the form of finding a single partition into a "correct" number of communities. In large networks, however, a multiscale hierarchy of communities is much more realistic. We show a hierarchical tree of communities, obviously more interpretable, is also potentially more accurate and more computationally efficient. We construct this tree with a simple top-down recursive algorithm, at each step splitting the nodes into two communities with a noniterative spectral algorithm until a stopping rule suggests there are no more communities. The algorithm is model-free, extremely fast, and requires no tuning other than selecting a stopping rule. We propose a natural model for this setting, a binary tree stochastic block model, and prove the algorithm correctly recovers the entire community tree under relatively mild assumptions. As a byproduct, we obtain explicit and intuitive results for fitting the stochastic block model under model misspecification. We illustrate the algorithm on a statistics papers data set constructing a highly interpretable tree of statistics research communities. ■

Spotlight DENVER

Sunday, July 28

1:00 p.m.
SPOTLIGHT DENVER KICK-OFF
Swing by and kick off JSM with a Colorado chili bar. Sample Colorado Buffalo and Bean Chili, Colorado Pork Green Chili, and White Bean Vegetable Chili—all with an assortment of toppings. Enjoy while it lasts!

3:30 p.m.
SPECIALTY HOUSE-MADE DONUTS
Sweet tooth? Come taste fresh, warm donut holes made to order by pastry chefs along with a selection of signature sauces and toppings. Grab one or two (while supplies last) and mingle with other attendees.

Monday, July 29

9:00 a.m.
DENVER INSIDER TIPS
Whether you seek information about activities and food nearby or the variety of options surrounding dynamic Denver; whether you have been to Denver before or need a rundown for your first time in the city, Visit Denver will be here to guide you.

10:00 a.m.
JSM COFFEE HOUSE
Refresh with freshly brewed coffee or a selection of Celestial Seasonings teas.

11:00 a.m. – 3:00 p.m.
JSM PHOTO BOOTH
Create memories with your friends using fun props.

1:30 p.m.
POPCORN BREAK
Enjoy an afternoon pick-me-up with popcorn!

3:30 p.m.
DENVER MICROBREW TASTING
Stop by to taste a variety of local Denver microbrews such as Colorado Native, Boulder Beer Hazed and Infused, and Colorado Cider (while supplies last).

Tuesday, July 30

10:00 a.m.
GET YOUR JSM ENERGY FIX
Come check out this alternative to a coffee break. Power up with fresh smoothies and energy bars.

1:30 p.m.
POPCORN BREAK
Enjoy an afternoon pick-me-up with popcorn!

3:30 p.m.
SAMPLE DENVER WINES
Denver has wine? Who knew? Don't miss this chance to taste area wines (while supplies last).

Wednesday, July 31

10:00 a.m.
JSM COFFEE HOUSE
Refresh with a cup of freshly brewed coffee or a selection of Celestial Seasonings teas.

Distinct, Dynamic, Diverse: See What Denver Is All About

Steps from the heart of downtown Denver stands the Colorado Convention Center—where the 2019 Joint Statistical Meetings will be held. Downtown Denver offers something extra for all attendees, with all there is to explore and enjoy, but be sure to also visit the different and eclectic parts of town.

16th Street Mall – A mile-long pedestrian promenade lined with outdoor cafés, restaurants, and retail shops. Shuttle buses provide free transportation on the mall every five minutes and pick up at multiple stops throughout.

Denver Pavilions provides shopping, dining, and entertainment on the 16th Street Mall.
Photo courtesy of Steve Crecelius and VISIT DENVER

Larimer Square – The block where Denver began, you don't want to miss Larimer Square. Explore downtown history while sampling some of the best dining, shopping, and nightlife in the city.

LoDo – Denver's downtown hip historic district has more than 90 brew pubs, sports bars, and music clubs.

A man walks up the steps of the Colorado Capitol, past the "One Mile Above Sea Level" step.
Photo courtesy of Dave Falconer and VISIT DENVER

Capitol Hill/Golden Triangle – A vibrant mix of arts, culture, and Colorado history, "Cap Hill" offers much to see and do. Explore the gold-domed Colorado State Capitol with its "Mile High" marker on the 13th step. Civic Center Park plays host to live music and food trucks on Tuesdays and Thursdays from May until October. Be sure to visit the museums nestled among beautiful turn-of-the-century mansions. And nearby Golden Triangle boasts more than 50 galleries, fine-art studios, museums, specialty stores, restaurants, night clubs, coffeehouses, and bistros, including the Denver Art Museum.

Dine in the street when you visit Larimer Square.
Photo courtesy of VISIT DENVER

The interior of Tattered Cover Book Store
Photo courtesy of VISIT DENVER

Tattered Cover Book Store – This iconic Denver store transformed the historic Lowenstein Theater into its home, putting a coffeehouse in the old theater's lobby and dozens of bookshelves where the stage and orchestra pit once were. *www.tatteredcover.com*

East Colfax – Colfax Avenue is the longest commercial street in the US. It first appeared on Denver maps in 1868 as a dirt road and then became a bustling trolley route in The Mile High City in the 1890s. Today, the street is lined with an eclectic mix of eateries, bars, brewpubs, and shops, as well as entertainment and live music venues like the Fillmore Auditorium and the Ogden and Bluebird theaters.

Five Points – One of Denver's oldest and most diverse neighborhoods, this area was known as the "Harlem of the West" because it was a frequent stop for jazz greats such as Billie Holiday, Louis Armstrong, and Miles Davis. The neighborhood was also mentioned repeatedly in Jack Kerouac's *On the Road*. Today, it is a fascinating fusion of old and new. Visitors can stop in at innovative coffeehouses and craft breweries, visit museums telling stories from the past, or eat at beloved soul food and barbecue institutions.

Nocturne Jazz & Supper Club is a bi-level lounge and eatery serving up eclectic plates and cocktails amid live jazz music. Located in Five Points.
Photo Courtesy of Evan Semon and VISIT DENVER

Ways to See the City

First, check out the Regional Transportation District's (RTD) website at *www.rtd-denver.com* for routes, fares, and other pertinent information. It is easy to get back and forth from the airport using RTD's A line directly to Union Station, the hub of Denver's transportation system. Union Station is also home to light rail, regional and local buses, and Amtrak rail services.

Also, the 16th Street Mall has a free shuttle for easy downtown exploring.

The 16th Street Mall has a free shuttle for easy downtown exploring.
Photo courtesy of VISIT DENVER

Hundreds of miles of dedicated bike paths weave through Denver and its edges. You can, for example, ride from Cherry Creek State Park in southeast Denver to Cuernavaca Park on the northwest side of downtown. The 15-mile paved path follows along Cherry Creek to where it collides with the South Platte River at Confluence Park. Denver B-Cycle (*www.denver.org/listing/denver-b-cycle/7581*) is an automated bike-sharing system designed for use by many people for short trips around Denver. You can check out one of the 700 bikes from any of 82 stations and return it to any other station.

Looking for something different? Why not try a scooter? ScooTours Denver (*www.denver.org/listing/scootours-denver-scooter-rental-%26-tours/8146*) offers motorized, Vespa-style scooter rental and guided scooter tours. Never ridden a scooter before? No problem. If you can ride a bicycle, are 18 or older, and have a valid driver's license, ScooTours will train you.

Deals and Discounts

Be sure to check out the Visit Denver website at *www.denver.org/about-denver/denver-resources/deals-discounts* for extra deals and discounts. You can find discounts on tours, rafting, rock climbing, zip lines, and breweries, as well as coupons for restaurants, museums, and attractions.

Extend Your Trip

Want to see more of Colorado before you head home? Visit *www.denver.org/things-to-do/day-trips-around-colorado* to help plan your trip. With information about extended day trips and area sites such as Rocky Mountain National Park, Dinosaur Ridge, Red Rocks, and Pikes Peak, you will get an idea of where to start and where to end. ■

MORE ONLINE
To learn more and buy tickets for many of these extras, go to the Visit Denver website at *www.denver.org/things-to-do/day-trips-around-colorado.*

Student Guide to JSM

Lara Harmon, ASA Marketing and Online Community Coordinator

Student Mixer at JSM 2018: Lucy Gao, Jean Feng, Brian Williamson, Arjun Sondhi, and Brendan McVeigh
Photo by Eric Sampson/ASA

Are you an ASA student member? We're hoping to see many of you at JSM 2019! This year, we head for Denver and the Rocky Mountains. In addition to sessions and sightseeing, don't miss the chance to volunteer! We have opportunities for a range of time constraints and interests.

Attend a Continuing Education (CE) Course for Free

JSM's CE courses give conference attendees a chance to learn from experts they might not otherwise meet in person. As a volunteer CE monitor, you can attend a course for free. CE monitors help courses run smoothly and get to follow along with course content and meet the instructor and attendees. Interested? Contact Rick Peterson, the ASA's professional development and chapters and sections manager, at *rick@amstat.org*. Keep an eye on the JSM 2019 website for a list of CE courses, and then let Peterson know which one you would most like to monitor.

Meet Presenters and Gain Experience Managing a Session

Session chairs introduce and support session presenters. These volunteers help keep sessions on topic and on time, plus they get to meet and work directly with session presenters. Session chair slots fill up, but don't give up if they are full—you can still volunteer as a backup. To learn more about what session chairs do and to apply, visit the JSM 2019 website at *ww2.amstat.org/meetings/jsm/2019*, choose "Be on the Program," scroll down to the "Chairs" bar, and click to see the details.

Learn More About Student Chapters

Over the past few years, the ASA's student chapter program has grown to more than 70 student chapters, spread all across the US. This year, we're hosting our third JSM student chapters meeting. If you are a student chapter officer, faculty adviser, member, or just interested in learning more about student chapters, join us for this chance to share ideas and plan for the future. We'll need a few helping hands to keep the meeting running smoothly! Contact Lara Harmon, the ASA's marketing and online community coordinator, at *lara@amstat.org* if you are interested in helping with setting up and moderating the event. We'll let you know the time and place as soon as they are determined.

Meet Fellow Student Members from Across the Country (and the World)

Will this be your first time at JSM? Don't miss the Student Mixer on Monday, July 29, from 6–8 p.m. Enjoy free food and drinks, enter our raffle, and mingle with other student attendees. Handing out raffle tickets before the mixer takes a few pairs of hands—if you're interested in helping out, contact Harmon. ■

January, San Diego, and Leveraging Data to Shape the Future? Yes, Please.

Ofer Harel and Kate Crespi, ICHPS 2020 Co-Chairs

Where do you plan to be in January 2020? The ASA's Health Policy Statistics Section (HPSS) and ASA staff are planning the biennial International Conference on Health Policy Statistics (ICHPS), to be held January 6–8, 2020, in San Diego, California.

The theme of ICHPS 2020 is "Leveraging Data to Shape the Future." The conference will provide a unique forum for the advancement and dissemination of statistical methods focused on health policy, health care, and health services, broadly defined.

ICHPS is a smaller meeting (typically 300–350 attendees) that provides an opportunity to get to know a community of statisticians and other professionals working in the health policy and health services arena.

The conference program includes workshops and talks, as well as town halls and roundtables. The featured speakers are the following:

Susan Murphy, professor of statistics, Radcliffe Alumnae Professor at the Radcliffe Institute, Harvard University, and professor of computer science at the Harvard John A. Paulson School of Engineering and Applied Sciences

Daniel Polsky, executive director of the Leonard Davis Institute of Health Economics, professor of medicine in the School of Medicine, and the Robert D. Eilers Professor of Health Care Management in the Wharton School at the University of Pennsylvania

Who Should Participate and How?

The invited program is already complete. However, conference committee members are still looking for contributions from researchers throughout the world so they can build a diverse program. Abstract submission for contributed talks and posters is open until June 28, 2019. Current students and recent graduates who submit abstracts may apply for a travel support award.

Do you have a topic you want to know more about? Or a hot topic you want to discuss with others? Roundtables and town hall discussions are being planned. Email *ichps2020@gmail.com* with your topic of interest or the name of a person you would like to chat with for career advice. Also email *ichps2020@gmail.com* to volunteer your time to chair a session or support students, new graduates, or others attending ICHPS.

Visit the beautiful beaches of La Jolla during your stay in San Diego.
Photo courtesy of Getty Images

Why San Diego?

Can you imagine a better destination in the US for January?

Details

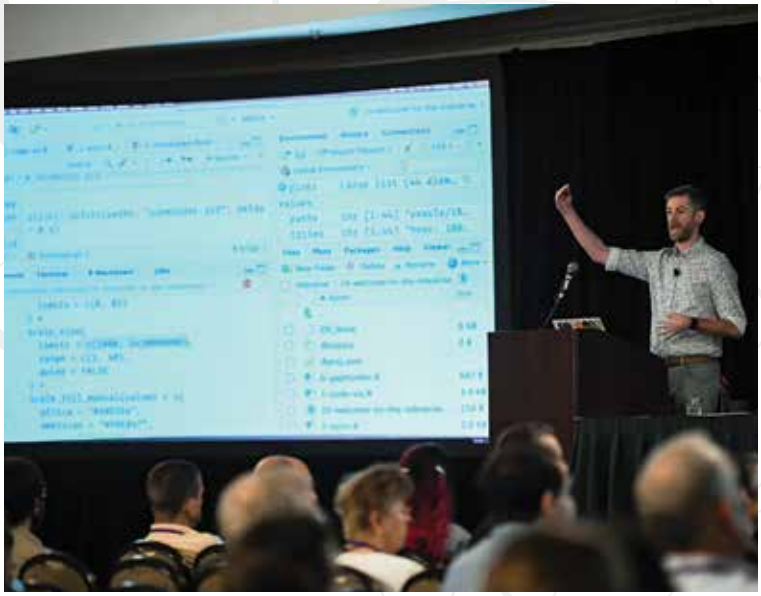
ICHPS will be held at the Wyndham San Diego Bayside Hotel. A limited number of rooms will be available at a negotiated group rate beginning September 13, 2019. San Diego has a variety of hotel and travel options within a few miles of the meeting venue.

In addition to what you may find on your own, the program committee will have a list of local activities for each evening and suggestions for those who plan to stay for a longer period.

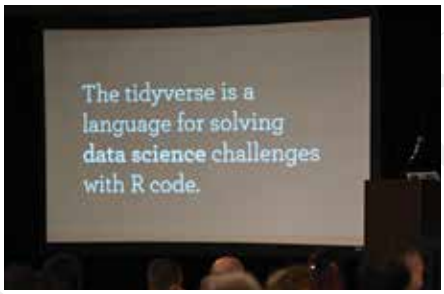
Registration opens September 13, 2019. September 13 (11:59 p.m. ET) is also the deadline for current students and recent graduates to submit travel award applications. Visit *ww2.amstat.org/meetings/ichps/2020/awards.cfm* for more information. ■

MORE ONLINE
For details about ICHPS 2020, visit *ww2.amstat.org/meetings/ichps/2020.*

Reflections on CSP: Why I Love the Conference on Statistical Practice



Hadley Wickham, from RStudio, gives his keynote address, "What Is Data Science?"
Photo by Olivia Brown/ASA



A slide from Hadley Wickham's keynote address, "What Is Data Science?"
Photo by Olivia Brown/ASA

Tmader Alballa of Virginia Commonwealth University discusses her poster, "Bayesian Technique for Relating Genetic Polymorphisms to Diffusion Tensor Images of Cocaine Users' Brains."
Photo by Olivia Brown/ASA

Eric Vance, director of the Laboratory for Interdisciplinary Statistical Analysis, University of Colorado-Boulder, and chair of the 2019 CSP Steering Committee

The 8th annual Conference on Statistical Practice (CSP) was held in New Orleans, Louisiana, February 14–16. There were 483 attendees, including me. Along with several other people, I have attended all eight CSPs. *Why?* Because I love the Conference on Statistical Practice. *What in particular do I love about it?* I love many things about CSP; I'll discuss three of them here.

In all four themes of the conference and throughout all the short courses, concurrent session talks, posters, tutorials, and practical computing demonstrations, the focus is on the *practice* of statistics and data science. The Data Modeling and Analysis theme highlights techniques and best practices for—you guessed it—modeling and analyzing data. The Data Science and Big Data theme helps attendees stay current with state-of-the-art methods for solving problems with extremely large, unconventional, or complex data. The Software, Programming, and Data Visualization theme helps attendees integrate statistical software into their current processes. And my favorite theme—Communication, Collaboration, and Career Development—helps attendees develop professional skills to increase their impact and advance in their careers.

Second, CSP is the right size for face-to-face interactions. Acquaintances met during the first day of short courses can become lifelong friends and

Davia Moyse of ICF presents her poster, "Data-Driven Programming Techniques in SAS and R."
Photo by Olivia Brown/ASA

Marshal Wigwe of Texas Tech University talks about his poster, "Evaluation of the Effect of Well Parameters on Oil Production."
Photo by Olivia Brown/ASA

Steve Cohen of RTI International reviews the posters during Thursday's Opening Mixer.
Photo by Olivia Brown/ASA

Jessica Randazzo of Tulane and Zihan Wei attend the Opening Mixer during CSP.
Photo by Olivia Brown/ASA

colleagues by the closing session. The CSP Mentoring Program matches beginning statisticians and data scientists with those with more experience, providing a two-way avenue to discuss issues beneficial for both mentee and mentor. Themed group dinners provide social opportunities organized around a statistical topic. Planned evening outings can be the highlight of the entire conference. This year, attendees could choose between joining a ghost tour of New Orleans or packing into a jazz hall on the first night of the conference and then watching a Mardi Gras parade through New Orleans' historic French Quarter on the second night.

My favorite part of CSP 2019 was the keynote address. As chair of the CSP Steering Committee, I had the privilege of choosing the keynote speaker. Out of everyone I could have chosen, I asked Hadley Wickham, chief scientist at RStudio, because he is developing tools that help statisticians and data scientists do smart and relevant things with data. His R packages in the tidyverse make importing, tidying, exploring, visualizing, summarizing, and modeling data easier, faster, and more fun. His keynote, "What Is Data Science?" provided attendees with practical tools and tips to improve their practice of statistics and data science and become more impactful in their careers. ■

MORE ONLINE
CSP 2020 will take place in Sacramento, California. We would love to see you there!
ww2.amstat.org/meetings/csp/2020

USPROC Sees New Round of Winners

Vittorio Addona, Macalester College; Kelly McConville, Reed College; and Joseph Nolan, Northern Kentucky University

The co-chairs of the Undergraduate Statistics Project Competition (USPROC, *www.causeweb.org/usproc*) organizing committee announce the winners for the fall 2018 submission cycle. In the two categories of the Undergraduate Statistics Class Project Competition (USCLAP), the winners are the following:

Introductory Statistics Competition

1st Place: Johanna Emmanuel, Ian McNamara, and Sophie Kleinheksel of Hope College for "The Effect of Music on Memory Tasks"
Faculty Sponsor: Yew-Meng Koh

2nd Place: Michael Miller and Christopher Anderson of Skidmore College for "Global Suicidality: Indicators in Substance Abuse"
Faculty Sponsor: Julie A. Douglas

3rd Place: Carter Morfitt, Nick Harrison, Cory Leigh, and Durante Rodriguez of Western Washington University for "Predicting Park Visitation in the Twin Cities Metropolitan Area in Minnesota Using Geolocated Social Media Data"
Faculty Sponsor: Kimihiro Noguchi

3rd Place: Benjamin Siegel of the United States Military Academy at West Point for "Does Money Buy Happiness?"
Faculty Sponsor: Dusty Turner

Honorable Mention: Kathleen Newman and Thomas Williams of the United States Military Academy at West Point for "Behind the Army Physical Fitness Test"
Faculty Mentor: David del Cuadro-Zimmerman

Honorable Mention: Christopher Belica, Kendall Collins Riley, and Safia Hattab of Hope College for "The Effects of Positivity and Negativity on Response Length"
Faculty Mentor: Yew-Meng Koh

Intermediate Statistics Competition

1st Place: Mikoto Kobayashi, Abigail Lewis, Mukund Kalani, and Anjali Jha of Grinnell College for "Sharper Whites and Brighter Brights: Cost-Effective Stain Removal for College Students"
Faculty Mentor: Jeff Jonkman

2nd Place: Yujie Wei and Jingyuan Gan of Wellesley College for "Facebook or Fakebook: Identifying Fake Facebook Accounts"
Faculty Mentor: Qing Wang

3rd Place: Lauren Acker, Natalie Cook, and Zack Jones of Grinnell College for "The Rural-Urban Divide and Belief in 'America First': A Logistic Regression Analysis"
Faculty Mentor: Jeff Jonkman

3rd Place: Margaret McGuire of the College of Wooster for "Predicting Tooth Loss from North Carolina Behavioral Risk Factor Surveillance Survey Data"
Faculty Mentor: Marian Frazier

Honorable Mention: Elizabeth Daly, Charlotte Siewick, Caroline Simmons, and Yimeng Xiao of the University of Virginia for "Forecasting Carbon Dioxide Levels in Mauna Loa, Hawaii: A Study of the Moving Averages Smoothing Method"
Faculty Mentor: Krista Varanyak

Honorable Mention: Simon Couch of Reed College for "A Geo-Spatial Study of Bikeshare Station Locations"
Faculty Mentor: Heather Kitada

For the Undergraduate Statistics Research Project Competition (USRESP), the winners are the following:

1st Place: Jasmine Horan (Amherst College) for "Fixing the Curve: Improving Major League Baseball Pitch Classification with Model-Based Clustering"
Faculty Mentor: Nicholas Horton

1st Place: Simon Couch, Zeki Kazan, and Kaiyan Shi of Reed College for "A Differentially Private Wilcoxon Signed-Rank Test"
Faculty Mentor: Andrew Bray

3rd Place: Omar Kamal and Hanao Li of the University of Nevada, Reno for "Predicting Pediatric Traumatic Brain Injury Mortalities"
Faculty Mentors: Mihye Ahn and So Young Ryu

Honorable Mention: Ademide Ajayi of Yale University for "Using Natural Language Processing to Observe and Understand Public Opinion of the President of Nigeria"
Faculty Mentor: Xiaofei Wang

Honorable Mention: Katya Kelly and Katie Jolly of Macalester College for "Whip It Like a (Wo) Man: Survival Analysis of Minority Contestants on MasterChef Junior"
Faculty Mentor: Vittorio Addona

The deadline for students to submit their work for the next submission cycle is June 28. Both spring 2019 and year-long projects are eligible, and winners receive cash prizes. ■

MORE ONLINE
Visit the USPROC website at *www.causeweb.org/usproc* to view the winning projects.

Kosorok

Reimher

Michael R. Kosorok from The University of North Carolina at Chapel Hill was named the 2019 Noether Senior Scholar. The 2019 Noether Junior Scholar is **Matthew Reimher** from Penn State University. Both will deliver lectures at this year's Joint Statistical Meetings in Denver, Colorado.

The Noether awards were established to recognize distinguished researchers and teachers and to support the field for nonparametric statistics. ■

Donald Rubin Delivers S.N. Roy Memorial Lecture

From left: Partha Lahiri, Junni Zhang, Don Rubin, and Asis Chattopadhyay; photo taken by Gaurangadeb Chatopadhyay shortly after the S.N Roy Memorial Lecture, December 27, 2018.

Donald Rubin delivered the S.N Roy Memorial lecture, "Conditional Calibration and the Sage Statistician" December 27, 2018, at the 10th International Triennial Symposium, held at Calcutta University.

Rubin is a member of the US National Academy of Sciences and has received numerous honors and awards. He is a professor at the Yau Mathematical Sciences Center, Tsinghua University; a Murray Shusterman Senior Research Fellow, Fox School of Business; and professor emeritus, Harvard University.

In 1966, the department of statistics at Calcutta University started the distinguished lecture series in honor of S.N. Roy. To learn more about Roy, visit *https://doi.org/10.1016/j.jspi.2007.03.003*. ■

How Can We Help?

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

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

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

Obituaries

Ayala (Aya) Cohen

Ayala (Aya) Cohen passed away February 20, 2019, at 79. She is survived by her husband, Elisha Cohen, their two sons, and seven grandchildren.

Cohen was an Israeli statistician at the Technion - Israel Institute of Technology's Faculty of Industrial Engineering and Management and head of the Technion's Statistics Laboratory. Born in Tel Aviv on January 27, 1940, to German-born parents, Cohen lost her father when she was 9 years old. In 1957, upon graduating from high school, she joined the Israel Defense Forces, where she served for two years as a mathematics/physics tester for pilot cadets. She earned her bachelor's degree in mathematics and physics in 1962 from the Hebrew University in Jerusalem and her PhD in statistics from The Johns Hopkins University in 1967.

From 1967 to 1969, Cohen worked with the statistics group at AT&T Bell Labs, where she also spent two sabbaticals and several summers. She joined the Technion in 1970 and worked with researchers in multiple disciplines throughout her career. She published both methodological and applied articles, focusing on behavioral sciences and medicine. Her areas of expertise included applied multivariate analysis, hierarchical modeling, time series analysis, and biostatistics. She was past-president of the Israel Statistical Association and a member of the Advisory Committee for Statistical Methodology, nominated by the National Statistical Council.

In 1988, along with Paul Feigin, Cohen established the Technion Statistics Laboratory and later became its head, a position she held until her passing. For more than 30 years, the lab staff under her leadership provided statistical consulting to a wide range of clients and organizations, often developing and publishing methodological innovations. Her consulting style was highly professional but also personal and generated among her clients a large cohort of devoted friends for life. The statistics lab provided students of all disciplines with sound statistical advice for their research projects and theses and offered hands-on training in applying advanced research methods.

Cohen was a gifted award-winning teacher, as evidenced by the multiple certificates covering her Technion office wall. With her engaging style, she was able to clearly explain complex topics. Her video lecture series quickly became a classic among generations of Technion students and was later made available on YouTube (*www.youtube.com/playlist?list=PL8A609A4F0B1BE65C*). Throughout the years, she delivered many workshops on various topics, including structural equation modeling, mixed models, and moderators and mediators.

Cohen was an extraordinary mentor who inspired her students and collaborators to view and use statistics as a tool to improve people's quality of life and change the world for the better. She was a true leader in making statistics accessible, useful, and fun. Cohen was a big advocate of learning from experience and always emphasized that mistakes are inevitable and useful in the learning process. Her love of research and excitement about the use of statistics to solve real-world problems will continue to inspire those who were fortunate to learn from and collaborate with her. She possessed a unique ability to create and maintain lifetime and ongoing relationships with many of her students in Israel and around the world. She was instrumental in making colleagues and students new to the faculty feel welcome and enthusiastic about statistics.

After her retirement in 2008, Cohen continued to teach, direct the statistics lab, and conduct research. She secured research grants, including one from the prestigious US-Israel Binational Science Foundation. A few days before her passing, she submitted her last research proposal.

To read more about Cohen, visit the blog created in her honor at *https://profaya.blogspot.com*.

Brian (Brett) O'Hara

Brian J. (Brett) O'Hara, 47, a resident of Crofton, Maryland, died September 16, 2018, of a malignant brain tumor.

Brett was born in Libertyville, Illinois, and pursued his undergraduate studies at St. Olaf College. He was pursuing his doctorate in economics at the University of Notre Dame in 1995 when the oligodendroglioma was discovered. Brett underwent surgery, chemotherapy, and radiation and returned to his studies, earning his PhD in 2000.

Obituaries

He was passionate about health and disability research, specifically the economic effects of major illnesses and health insurance coverage. Brett worked for the federal government for 19 years, 16 of those at the US Census Bureau.

Brett was a loyal and true friend to many; however, Brett's greatest joy was being a father to his children, Eva (18) and Aengus (12).

In lieu of flowers, memorial contributions may be sent to the Mandrin Inpatient Care Center, Hospice of the Chesapeake. Visit *www.hospicechesapeake.org*.

Edward Hugh Simpson

Chris Christensen, Northern Kentucky University

Edward Simpson—codebreaker, statistician, and civil servant—died February 5, 2019, at the age of 96.

Edward was born on December 10, 1922, and grew up in Northern Ireland as an only child. He attended Colerain grammar school and planned to study languages at university. However, in the summer of 1938, the headmaster suggested to Edward that he leave school a year early and go to Queens University, Belfast, to study mathematics because war was likely and the country would need mathematicians. So, at age 16, Edward went to Queens. He graduated with a 1st in 1942 at age 19.

In the fall of 1942, Edward was recruited to work as a codebreaker in the Italian Naval Section of Bletchley Park. In the fall of 1943, as the war with Italy was ending, Bletchley Park's Italian Naval Section found themselves with little work and most of the codebreakers were transferred to work on Japanese ciphers. Edward was selected to lead Bletchley Park's attack on JN-25, which was the primary Japanese naval cipher.

When the war ended, Edward went to Christ's College Cambridge to continue his study of mathematics. His tutor was Maurice Bartlett. However, in 1947, Edward left to enter the civil service. He served first in the treasury and then as principal private secretary to Lord Hailsham, Lord President of the Council, and Lord Privy Seal. Most of Edward's post-war career was in the department of education and science, from which he retired in 1982 as deputy secretary. He received a CB (Companion of the Bath) in 1976 for his services to education.

In 1946, while still at Cambridge, Edward wrote "The Interpretation of Interaction in Contingency Tables" with Bartlett. It was published in 1952 in the *Journal of the Royal Statistical Society* at Bartlett's request so he could refer to it. It was this paper that introduced Simpson's Paradox, which demonstrates that a trend appearing when data is segmented into groups can disappear or reverse in the aggregate.

In 1949, he published "Measurement of Diversity" in *Nature*. That paper introduces the Simpson Index (of Diversity). Although Edward could not mention it at the time of publication, the index was based on the repeat rate (RR) in use in the Italian Naval Section at Bletchley Park (BP) when he arrived. In a March 26, 2014, email, Edward discussed how the idea for the index arose:

> [The idea] is so simple that it will spring up spontaneously all over the place. Anyone who looks at an enciphered text will start by doing a frequency count of its letters or figures or whatever it comprises and will at once see that the sum of the squares of the frequencies measures the repeat rate, the probability that two items selected at random will be the same.
>
> So, when I did my four terms of mathematical statistics at Cambridge … and chose to elaborate the RR, this did stem from BP. But not only that. I had read Udny Yule's "Statistical Study of Literary Vocabulary" at BP when it came out in 1944 and been very excited by it. This made it easy for me to explain my interest in the problem without mentioning BP. It is odd that my name got attached to the index (which I didn't know for 50 years) when the name of Yule's Characteristic was ready to hand.
>
> What prompted me to publish it in 1949? I think just that I was two years into my civil service career, enjoying it, not going back professionally to statistics, and that it would be a pity to let this bit of work go to waste.

In 1947, Edward married Rebecca Gibson, another Bletchley Park codebreaker. Rebecca died in 2012. Edward is survived by a son, a daughter, and four grandchildren.

Obituaries

Babu Shah

Complied by Akhil K. Vaish, RTI International, from various sources and in consultation with J. N. K. Rao and Kanti Mardia

Babu Shah

Babu Shah, former chief scientist at the Research Triangle Institute (RTI International) and father of RTI's SUDAAN software systems, passed away January 27, at the age of 83.

Described by a former colleague as "the petite fellow from India," Shah was one of RTI's statistical giants. He retired from RTI in 2003, after 37 years of service to the institute. He held a bachelor's in mathematics (1955), a master's in statistics (1957), and a doctorate in statistics (1960) from the University of Bombay, India. His PhD thesis led to five brilliant single-authored papers on construction and analysis of experimental designs in the *Annals of Mathematical Statistics* (September 1958–June 1960). Oscar Kempthorne was so impressed by the elegance and beauty of Shah's published research that he invited Shah to work with him as a research associate at Iowa State University (1959–1962). He worked on optimization in response surface methodology and jointly developed the ingenious method of parallel tangents (PARTAN), which is scale invariant and much faster than the well-known steepest descent method.

Shah was a recognized international expert in statistics, methodological research, and data management. In addition to serving as chief scientist, he held positions at RTI as associate director, department manager, and statistician. He was an American Statistical Association Fellow, an elected member of the International Statistical Institute, and a Royal Statistical Society Fellow. He served as an adjunct professor in the department of biostatistics at The University of North Carolina at Chapel Hill.

In 1984, RTI introduced Shah's SUDAAN, the first statistical software created to analyze correlated data collected from complex surveys. The tool quickly became the industry standard, and the 11th version was released in 2012. Shah named it SUDAAN for two reasons—a shorthand acronym for "survey data analysis" and because the word, in Sanskrit, means "beautiful gift." RTI's small-area estimation software development would not have been possible without Shah's inspired contributions.

After his retirement, Shah started working on SAFAL (Statistical Analysis Functions Application Language). He was motivated to help graduate students and research statisticians who have to spend considerable time writing computer programs to evaluate their research formulae. SAFAL is a multiprocessor language that directly translates mathematical formulae into computer programs. Up until his death, with limited eyesight and 1-inch font, he continued this work and recently completed a working SAFAL prototype.

On numerous occasions, Shah donated his paid time off to staff in need and provided financial assistance to his relatives and friends. He was unselfish in providing technical and statistical guidance to the hundreds of statisticians who have worked at RTI during his tenure. He was also one of the first to receive an RTI Mentoring Champion Award in 1999. Shah is fondly remembered by his former colleagues and friends:

> "I consider Babu's contributions to statistical theory and methods, computation methods, and software development to have been absolutely critical and invaluable to the advancement of the field of survey research. In addition, his work and encouragement were very important to my career. He was a wonderful colleague and friend. I will cherish the memories of his unending energy and creativity when we worked together during the 1980s and 90s on the development of SUDAAN and of the statistical methods it implemented."
> ~Barry I. Graubard, National Cancer Institute

> "Babu was one year junior to me in Bombay University. I graduated in 1956 and Babu in 1957. After spending two years as a research scholar in India, I came to Iowa State to do my PhD.

Obituaries

Babu took the research scholarship in Bombay and, within two years, wrote a brilliant PhD thesis on balancing designs and related topics. I believe Babu is among the most original researchers and always came up with brilliant ideas. His work in experimental designs for his PhD thesis is path breaking. Babu's contribution to SUDAAN is monumental. I was even looking forward to his breakthroughs in computing using AI ideas."
~J.N.K. Rao, Carleton University

"Babu was my close classmate at the University of Bombay (1955–1957). The number of students in the class were restricted to 24 and were selected from all over India. He was a quick thinker with great critical ability. He had a calm, balanced, and peaceful personality. He was a quiet and unassuming friend, always to the point, and, whatever was happening, he would take in his stride, which I very much admired. He came to Leeds University as a consultant to the experimental design and analysis package SELINA, which the department was developing in the 1980s. His great expertise led to a new direction to make the design and analysis of experiments more user-friendly and accessible to nonstatisticians. This software is still active, which is amazing over 25 years later."
~Kanti V. Mardia, University of Leeds

"The importance and utility of Babu's statistical innovations and advances directed to the analysis of complex survey data is readily apparent in the vast number of citations attesting to his multifold contributions to the field. I was quite fortunate to work with and benefit [from] Babu's expertise over several decades. His continuous commitment to the implementation of new advances in application via SUDAAN has facilitated a multitude of innovative model-based analyses of national health and health care data that were and remain essential to informing health policy and practice."
~Steven B. Cohen, RTI International

"Babu was creative, thoughtful, and unselfish. He had remarkable integrity; his smile was infectious (and he smiled frequently—thank goodness!). He was a wonderful mentor, a statistician's statistician, and the epitome of a gentleman and a gentle man."
~Kerrie Boyle, RTI International (retired)

"Babu Shah has been my teacher, colleague, and friend for over 25 years, since I first joined the SUDAAN project. From him, I have learned how to take credit for my mistakes as well as my accomplishments and the importance of family above all else. Of course, there were the technical insights, the ingenious ideas for solving difficult problems, the staggering wealth of knowledge, and the unwavering certainty that no problem was too tough to crack that he regularly shared with me. But there was so much more to Babu. He was insatiably curious, unfailingly kind, and always generous with his time and ideas. No problem or idea was ever too small or too large to discuss with Babu, and despite his eminence and stature in the statistical community, he always treated my questions and ideas with respect. The thing that got to me more than anything else though was Babu's intellectual honesty and unvarnished willingness not just to own his mistakes, but to celebrate them. I can't count the times he sought me out and gleefully reported a "booboo" he had made. Babu once said that the word SUDAAN means "beautiful gift." I know in my heart that Babu was our beautiful gift."
~Beth Barnwell, RTI International (retired)

He was the baby of the family. With two older brothers and four older sisters, he was the youngest of the youngest. He wasn't supposed to be the patriarch of the family, but with the premature passing of his older brothers, he assumed the role with grace, humility, and brilliance.

What a polymath he was. No DIY project was too daunting to undertake, no circuit diagram was too complex to decipher, no puzzle was too hard to solve, no origami object was too hard to master. He was indeed our beautiful gift.

Shah is survived by his wife, Ketki Shah; son, Parag Shah; and daughter, Mona Shah-Shurland.

Bernard Harris Award

The Bernard Harris Award is a new endeavor by the ASA's Section on Risk Analysis to provide financial support for speakers in invited technical sessions organized by the Section on Risk Analysis at the annual Joint Statistical Meetings (JSM) and/or conferences or symposia organized by the section.

Invited sessions at JSM and other meetings foster free exchange of scientific information. A diversity of speakers broadens the knowledge and perspective of these sessions. The Bernard Harris Award will provide a resource for the Risk Analysis Section to enhance diversity.

Speakers receiving the award will generally fall into one or more of the following categories:

- Someone who would bring valuable knowledge and perspective to the session but who typically is not a statistician and would not ordinarily attend JSM
- A recent graduate of an accredited university program whose thesis or published work shows unusual promise and potential value to the body of statistical knowledge
- A statistician with a wide body of statistical research whose experience and insight would challenge and inspire colleagues

The annual award will be $1,800 and may be used only for a Risk Analysis Section invited speaker's travel and accommodation costs, including conference registration, if necessary.

About Bernard Harris

Bernard (Bernie) Harris (June 20, 1926 – January 28, 2011) led a distinguished research, consulting, and teaching career in statistics and mathematics. Graduating from Townsend Harris High School in New York City, Harris entered City College of New York and graduated with a degree in business administration in 1946. He was drafted into the Army, assigned to the Counter Intelligence Corps, and sent to Germany in the aftermath of World War II. Upon discharge, he worked for the US Census Bureau before pursuing an academic focus on theoretical mathematics and statistics. He undertook coursework at The George Washington University to earn a master's degree and was eventually employed by the National Security Agency as a mathematician. Harris earned a scholarship to Stanford University and completed his PhD in one year under the guidance of Charles Stein.

Moving from government service to the academic world, Harris joined the mathematics department at the University of Nebraska-Lincoln and served as the director of the statistics division. Soon, he was offered a joint position at the Mathematics Research Center (MRC) and a professorship in the statistics department at the University of Wisconsin-Madison. His research over the years involved work in random mappings, combinatorics, risk analysis, reliability, probability, statistical inferences, and terrorism concerns. He published many articles and reviews in professional journals. His first book, *Theory of Probability*, was published in 1966. He was the editor of *Spectral Analysis of Time Series* (1967) and *Graph Theory and Its Applications* (1970).

Harris became a fellow of the Institute of Mathematical Statistics and American Statistical Association, a member of the Honorary Society of the International Statistical Institute (ISI), and a recipient of the Army Wilks Award (1982) and Pioneers of Science Award (1982). He served on various committees for the ASA, ISI, Nuclear Regulatory Commission, and Classification Society of North America.

With colleagues Lee Abramson, Harry Martz, Lisa Weissfeld, and others, Harris worked to establish the Risk Analysis Section in the early 1990s and served as the first chair of the section. Interests within the section have evolved over the years to encompass a variety of fields, often touching on topics defining other ASA sections. The fund established in Harris's name seeks to support the evolution of the Risk Analysis Section.

Award selection: The recipient will be selected by a process determined by the ASA Section on Risk Analysis. As with all ASA awards, the selection process will not involve the donor. ■

Deadlines for Select ASA National Awards and Lectureships

Deadline: Oct. 15, 2019

- Lester R. Curtin Award
- Lingzi Lu Memorial Award
- Monroe G. Sirken Award in Interdisciplinary Survey Methods Research

Deadline: Nov. 15, 2019

- Deming Lecturer Award

Deadline: Dec. 2, 2019

- John J. Bartko Scholarship Award

Deadline: Dec. 15, 2019

- Elizabeth L. Scott Award

For more information about these and other ASA awards, visit *www.amstat.org/Awards.*

Detroit, Ann Arbor Chapters Promote Statistics at Fair

Karry Roberts, ASA Detroit Chapter Secretary

ASA Professional Award winners on stage at Cobo Hall

The Detroit and Ann Arbor chapters continued their long-standing tradition of serving as a professional awards judging team by awarding students for their use of statistics in their projects at the Michigan Science and Engineering Fair (MSEF) March 13.

This year, the state-level MSEF was held immediately after the regional Science and Engineering Fair of Metro Detroit (SEFMD) at Cobo Hall in Detroit, Michigan. There were 69 state-level qualifying students who presented their posters, still located among the rows of approximately 2,000 posters from the SEFMD.

Judges this year included Anamaria Kazanis, Ruth Cassidy, Karry Roberts, Lance Heilbrun, David Corliss, Bob Thomas, and Bern DeBacker from the Detroit Chapter and Nicholas Moloci, Mary Ann Ritter, and Andrew Ekstrom from the Ann Arbor Chapter. Bringing together academic and industrial strengths, the team individually reviewed posters and then chose from the best as a group.

The winners are as follows:

One $200 Award of Excellence

- Salena Prakah-Asante, "Increasing Soil Fertility via Carbon Sequestration with Slow Release Biochars," Cranbrook Kingswood Upper School, Bloomfield Hills

Eight $50 Awards of Merit

- Yang (Mark) Chen, "Active Learning DNN: Automated Engineering Design Optimization for Fluid," Cranbrook Kingswood Upper School, Bloomfield Hills
- Andrew Fischer, "Effects of Sugar and Potassium Nitrate as Rocket Fuel," Detroit Catholic Central High School, Novi
- Aarushi Ganguly, "Probabilistic and Image Analysis of Parkinson's Disease," Greenhills School, Ann Arbor
- Paul Havern and Reis Ciaramitaro, "Effect of Varying Currents on the Magnetic Field and Magnetite Removal," Macomb Mathematics Science Technology Center, Warren
- Chaz Lumpkin and Joseph Kovac, "Comparing Drag Force Reductions Among Varying Angles in Tractor-Trailer Panels," Macomb Mathematics Science Technology Center
- Neha Narayan, "Graphene Sand Synthesis and Applications in Water Filtration and Desalination," Salem High School, Canton
- Katherine Pan, "Developing and Adapting a Method for Leaf Area Imaging, Data Processing, and Association Mapping of Maize Leaf #6 Traits," Detroit Country Day Upper, Beverly Hills
- Shriya Reddy, "Noninvasive Diagnosis of Melanoma Using OCT and Bioconjugated Gold Nanospheres," Northville High School, Northville

11 Certificates of Recognition

- Syeda Islam
- Amol Kirtane
- Colton Morris
- Vihaar Nandigala
- Noor Nashashibi and Raneem Al-shihabi
- Ruhi Nayak
- Arionna Nelson
- Akash Rathod
- Nicklaus Sicilia and Erin Wycoff
- Adam Sun
- Madeleine Yang

Students receiving Certificates of Recognition also received a copy of *Significance* magazine and ASA stickers. ■

chapternews

Arizona Chapter

ASA members at DataFest ASU (from left): John Stufken (ASU), Derek Sonderegger (NAU), Rodney Jee (USAA), Anne Hansen (Tuft and Needle), Jennifer Broatch (ASU/West), Yongzhao Peng (MAG)

The Arizona Chapter completed its second annual ASA DataFest at Arizona State University/Tempe March 24. The event attracted 56 student online registrations, with 45 showing up at check-in.

A notable statistic was that 30% of the registrations were for freshmen, tied with seniors for largest class year. Last year's DataFest had a comparable number of registrations but only two freshmen.

Early on, there were questions as to whether the freshmen would be totally overwhelmed. As the data hackathon progressed through two nights, a few teams were seen to lose confidence in their results, which no doubt contributed to a high attrition rate for this year. By Sunday morning, only 31 students on nine teams showed up to present to the panel of judges.

Despite the short amount of time given for analysis, the fact that no information about the data was released prior to the unveiling Friday night, and the undergraduate level of all students, all four winning teams employed some form of regression modeling in deriving their results and conclusions.

As to what happened to the freshmen, one of the winning teams included four freshmen and one sophomore—rookies to watch out for in future DataFests!

The school of mathematical and statistical sciences was again the host organization and provided the facilities and event coordination. Rodney Jee, current chapter president, was the ASA contact and coordinator for industry partners. Discover Financial Services and USAA were platinum corporate sponsors, providing financial support and volunteers for the event. Participating ASA members included John Stufken, Derek Sonderegger, Rodney Jee, Anne Hansen, Jennifer Broatch, and Yongzhao Peng.

sectionnews

Biopharmaceutical

Juliet Ndukum on behalf of the ASA Biopharmaceutical Section Mentoring Program Committee

Networking can be challenging, but it is beneficial. Meeting others in our profession can help us quickly learn the ropes, improve our careers, and contribute to the statistical profession. Finding a mentor has its challenges and, keeping that in mind, the Biopharmaceutical Section has created a mentoring program based on the mentoring blueprint created by the Committee on Applied Statisticians. More than 100 people have participated in our mentoring program since 2014.

Mentee Wenlin Yuan said, "The mentoring program has been extremely stimulating and satisfying to me. My mentor, Greg, has been providing me lots of helpful advices and has been answering all kinds of my questions regarding statistics study, research projects, career development, graduate school application, and a lot more. I really appreciate the time and effort that my mentor has been devoted in helping me and also the opportunity that the mentoring program provided to learn from great statistician! I believe the mentoring program is a very beneficial and successful program, especially to people who are new to the statistics field, like myself. Thank you very much!"

Mentor Greg Ball said, "Really like the mentoring program. For me, in addition to being able to help young statisticians get off to a good start, I like keeping a connection to my roots. Wenlin and I have had some interesting and productive discussions this year. Would like to see this program continue to expand."

The goal of this program is to help members enrich and enhance their professional experience through achieving personal and professional goals. This may occur through sharing of knowledge and experience between a professional practitioner and someone entering the profession of statistics. A constructive mentorship relationship can take many forms and may occur at any stage of one's career with benefits for both the mentor and the mentee.

The section provides hands-on resources (*https://bit.ly/2JEWozx*) for mentors and mentees to facilitate their interactions. Information related to the mentoring activities and additional resources for mentors and mentees is available via the Biopharmaceutical Section website at *http://community.amstat.org/biop/aboutus/sub-committees/mentoring*.

The section is looking for mentors and mentees for the 2018–19 Mentoring Program. Are you interested in becoming a mentor to a statistician and helping fellow Biopharmaceutical Section statisticians? Are you a potential mentee, or can you nominate a statistician who may be looking for a mentorship program? If so, email your contact information to *biopharmmentoring@gmail.com* with "Biopharmaceutical Section Mentoring Program" in the subject line. ■

Quality and Productivity

The Quality and Productivity Section (Q&P) will jointly host an invited paper session at JSM 2019 with the Section on Physical and Engineering Sciences and Section on Statistical Learning and Data Science. The topic of the session is Decision-Making in Tech Giants Through A/B Testing: Prediction and Optimization.

Invited speakers include Souvik Ghosh from LinkedIn, Jiannan Lu from Microsoft, and Guillaume Basse from UC Berkeley, with discussion by Edoardo Airoldi from Harvard University. The session is chaired and organized by Tirthanker Dasgupta from Rutgers University. Be sure to check the online program (*ww2.amstat.org/meetings/jsm/2019/onlineprogram*) for details.

Q&P will not host roundtable discussions this year. ■

Physical and Engineering Sciences

Matt Pratola, SPES Education Chair

The Physical and Engineering Sciences Section will sponsor one short course and co-sponsor another short course at JSM 2019.

The SPES-sponsored short course is Design and Analysis of Experiments That Incorporate Simulator Platforms, led by Thomas Santner of The Ohio State University and Brian Williams of Los Alamos National Laboratory. The course abstract follows:

> Deterministic simulators ("simulators") based on microlevel mathematical descriptions of the physics or biology of a system are in the forefront of innovations for studying many engineering, biomechanics, and biological systems. This course will provide statistical tools to design and analyze experiments using simulators to identify the important factors controlling a given system, determine the manner in which the factors affect the system, and optimize the system. The course describes methods for experiments using data from either a simulator-only study or combined data from a physical system and simulator of the system. The course contains four sections. The first three sections provide tools to design and analyze simulator-only studies; the last uses the material of the first three sections to perform Bayesian calibration analysis using physical/simulator data. The first section provides methods for prediction based on given training data. The second section shows how to design computer experiments. The third section describes methods for conducting "sensitivity analyses" to identify the influential inputs to a simulator. The final section provides tools to conduct a Bayesian calibration analysis. This course is based on the second edition of the book *The Design and Analysis of Computer Experiments* by Santner, Williams, and Notz.

The co-sponsored short course is Big Data, Data Science, and Deep Learning for Statistician, led by Ming Li of Amazon). The course abstract follows:

> With the recent big data, data science, and deep learning revolution, enterprises ranging from FORTUNE 100 companies to startups across the world are hungry for data scientists and machine learning scientists to bring actionable insight from the vast amount of data collected. In the past couple of years, deep learning has gained traction in many

Mentor Greg Ball said, "Really like the mentoring program. For me, in addition to being able to help young statisticians get off to a good start, I like keeping a connection to my roots. Wenlin and I have had some interesting and productive discussions this year. Would like to see this program continue to expand."

sectionnews

application areas and become an essential tool in the data scientist's toolbox.

In this course, participants will develop a clear understanding of the big data cloud platform, technical skills in data sciences and machine learning, and motivation and use cases of deep learning through hands-on exercises. We will also cover the "art" part of data science and machine learning to guide participants to learn typical agile data science project flow, general pitfalls in data science and machine learning, and soft skills to effectively communicate with business stakeholders.

The big data platform, data science, and deep learning overviews are specifically designed for an audience with a statistics education background. This course will prepare statisticians to be successful data scientists and machine learning scientists in various industries and business sectors with deep learning as the focus. ■

Government Statistics

Almost 200 people joined data scientists from around the world to celebrate Women in Data Science (WiDS) March 4. Local events were organized in more than 150 regions, one of which was sponsored by the ASA and held in the DC-Virginia-Maryland area.

The regional event started with workshops on GitHub, R Shiny, statistical learning methods, and ethics in data science, which were followed by the keynote talks streamed from the main WiDS event (see *www.widsconference.org*). The agenda was filled out by including two sessions of ignite talks, where attendees gave a 3–5-minute talk sharing information about projects they are involved in, interesting career ideas and trajectories, and resources for data scientists.

The conference issued a data challenge to WiDS attendees and others who want to have fun analyzing a data set and possibly make important contributions to social good. The data set to be used contains breast cancer mortality data and can be downloaded from the US Centers for Disease Control and Prevention. Instructions for registering for the data challenge and downloading the data can be found at *https://sites.google.com/nonlinearlearning.org/2019datachallenge/details*.

Amanda Traud and Donna LaLonde serve as Women in Data Science ambassadors for the DC-VA-MD event.
Photo by Wendy Martinez

Contestants must register for the challenge by June 1 and will present their results September 13, either remotely or in person at the Bureau of Labor Statistics. Judging will take place at that time. ■

Survey Research Methods

The Survey Research Methods Section (SMRS) will host five roundtable discussions at the Joint Statistical Meetings in Denver. These sessions provide a unique opportunity for an informal discussion on topics across academics, industry, and government. AM roundtables begin at 7:00 and include breakfast ($25). PM roundtables begin at 12:30 and include lunch ($45).

There are Two SRMS AM Roundtables:

Using Behavioral Insights to Increase Response Rates
Victoria A. Velkoff, US Census Bureau
This roundtable will highlight work the US Census Bureau has done to integrate lessons learned from behavioral science research to communicate with respondents and motivate their response to Census Bureau surveys. Participants are invited to hear about the bureau's research and share their own work using behavioral insights in data-collection efforts.

Planning and Developing Methods for the Proliferation of Nonprobability Data Sources
Kennon Copeland, NORC at the University of Chicago
Rather than assuming the use of nonprobability survey data, administrative data, and organic data is a passing fad or attacking any use of such

data, we should develop approaches ensuring appropriate use and work toward guidelines for appropriate use, caveats, interpretation, and error measurement. We will discuss the current state, examples,and possible directions.

There are Three SRMS PM Roundtables:

Constructing Better Coverage Intervals for Parameters Estimated from a Complex Sample Survey
Phil Kott, RTI
A revised method of coverage-interval construction has been developed in the literature that "speeds up the asymptotics" by incorporating an estimated skewness measure. We will discuss how skewness-adjusted coverage intervals can be computed in common situations and why it is inappropriate to call them "confidence intervals."

Two Americas Now? What Polling Tells Us About Where We Stand
Mark Schulman, SSRS Research
Has the gulf between the two Americas even widened in 2018 and 2019? This roundtable will discuss recent polling and the 2018 elections results, electoral history, and other recent polling to provide a portrait of where we stand. Data sources include the Pew Research Center, election exit polling, and other leading public opinion sources.

What Do We Know About the Value of High-Quality Statistical Information? How Can We Learn More?
John L. Eltinge, US Census Bureau
This roundtable will focus on the connection between multidimensional measures of data quality and stakeholder value and methods to assess the value of intangible products like statistical information, including distinctions between "use value" and "option value," as well as the strengths and limitations of previous work.

These events have limited availability and are subject to sell-out or cancellation. If you have questions regarding SRMS roundtable discussions, contact Yang Cheng at *yang.cheng@census.gov* or Steven Pedlow at *pedlow-steven@norc.org*. To register for a roundtable, *visit ww2.amstat.org/meetings/jsm/2019/registration.cfm*. ■

DENVER, COLORADO

JSM2019

KEY DATES

July 1, 2019
Regular Registration Closes

July 2 – August 1
Late Registration

July 3, 2019
Housing Deadline

July 27 – August 1
2019 JOINT STATISTICAL MEETINGS

ww2.amstat.org/meetings/jsm/2019

July

3–5—ISSAT International Conference on Data Science in Business, Finance and Industry (DSBFI 2019), Da Nang, Vietnam
For more information, visit *www.issatconferences.org/dsbfi2019.html* or contact Michelle Pham, P.O. Box 281, Edison, NJ 08818; *michelle@issatconferences.org.*

8–12—International Workshop on Statistical Modelling 2019 (IWSM2019), Guimarães, Portugal
For details, visit *www.iwsm2019.org* or contact Luís Machado, Department of Mathematics and Applications, University of Minho, Guimarães, International 4800-058, Portugal; 351253510443; *lmachado@math.uminho.pt.*

8–12—2nd Corsican Summer School on Modern Methods in Biostatistics and Epidemiology, Corte, France
For details, visit *sesstim.univ-amu.fr/hearstat-2019* or contact Roch Giorgi, Faculté de Médecine, 27 bd Jean Moulin, 13005 Marseille, Marseille, International 13005, France; *roch.giorgi@univ-amu.fr.*

8–12—Research on Productivity, Trade, and Growth, Amsterdam, The Netherlands
For more information, visit *www.tinbergen.nl/research-on-productivity-trade-and-growth-theory-and-practice* or contact Christina Mansson, Gustav Mahlerplein 117, Amsterdam, International 1082 MS, The Netherlands; *summerschool@tinbergen.nl.*

8–26—University of Washington Biostatistics Summer Institutes, Seattle, Washington
For more information, visit *www.biostat.washington.edu/suminst* or contact Deb Nelson, 4333 Brooklyn Ave. NE, T-15, Seattle, WA 98185; *uwbiost@uw.edu.*

10–12—Benford's Law for Fraud Detection: Foundations, Methods, and Applications, Stresa, Italy
For details, visit *https://bit.ly/2uG71vF* or contact Lorena Marcaletti, Via Enrico Fermi, 2749, Ispra (VA), International 21027, Italy; *JRC-I-Events-Admin@ec.europa.eu.*

»10–12—Causal Inference Summer Institute, New Brunswick, New Jersey
For more information, visit *www.cceb.med.upenn.edu/cci/summer-institute-2019* or contact Jason Roy, 683 Hoes Lane West, Piscataway, NJ 08854; *jason.roy@rutgers.edu.*

17–20—International Symposium on Computational and Methodological Statistics and Biostatistics, Pretoria, South Africa
For details, visit *www.up.ac.za/symstat2019* or contact Johan Ferreira, IT Building 6-17, Pretoria, International 0002, South Africa; +27124202362; *symstat@up.ac.za.*

22–26—Introduction in Genome-Wide Data Analysis, Amsterdam, The Netherlands
For more information, visit *www.tinbergen.nl/introduction-in-genome-wide-data-analysis* or contact Christina Mansson, Gustav Mahlerplein 117, Amsterdam, International 1082 MS, The Netherlands; *summerschool@tinbergen.nl.*

22–26—European Meeting of Statisticians (EMS 2019), Palermo, Italy
For more information, visit *www.ems2019.palermo.it* or contact Angelo Mineo, Viale delle Scienze, Ed. 13, Palermo, International 90128, Italy; *ems-2019@unipa.it.*

24—2nd World Congress on Advances on Addiction Science and Medicine, Rome, Italy
For details, visit *addiction.cmesociety.com* or contact Nivetha M, 40 Bloomsbury Way, London, International WC1A 2SE, United Kingdom; *addictionscience@pulsusmeetings.net.*

JSM

***27–8/1—2019 Joint Statistical Meetings, Denver, Colorado**
For details, visit *ww2.amstat.org/meetings/jsm/2019* or contact ASA Meetings, 732 North Washington St., Alexandria, VA 22314; (703) 684-1221; *meetings@amstat.org.*

***28–31—2019 JSM Diversity Workshop and Mentoring Program, Denver, Colorado**
For more information, visit *community.amstat.org/cmis/events/dwmp/dwmp2019* or contact Dionne Swift, 411 Harpwood Dr., Franklin, OH 45005; (513) 622-3061, *swift.dp@pg.com.*

28–8/11—Summer Seminar in Philosophy of Statistics, Blacksburg, Virginia
For more information, visit *summerseminarphilstat.com* or contact Jean Miller, Philosophy Department, 229 Major Williams Hall (0126), Virginia Tech, Blacksburg, VA 24061; *jemille6@vt.edu*.

17–19—The Fourth Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI), St. Louis, Missouri
For more information, visit *www.math.wustl.edu/~kuffner/WHOA-PSI-4.html* or contact Todd Kuffner, 1 Brookings Drive, St. Louis, MO 63130; *kuffner@wustl.edu*.

29–30—Global Summit on Clinical Nursing and Women Health, Singapore
Visit *larixconferences.com/nursing* or contact Eunice Lim, 10 Anson Road, International Plaza, #22-02, Singapore 079903, Singapore, International 09393, Singapore; *globalnursingsummit2019@gmail.com*.

19–23—NSF-CBMS Regional Research Conference: Fitting Smooth Functions to Data, Austin, Texas
For details, contact Arie Israel, 3925 W. Braker Lane, Suite 3.340, Austin, TX 78759-5316; (512) 471-6424; *arie@math.utexas.edu*.

22–23—13th World Biomarkers and Clinical Research Conference, Vienna, Austria
For details, visit *biomarkers.euroscicon.com* or contact Harrison Parker, 40 Bloomsbury Way, Lower Ground Floor, Vienna, Austria; +432033182512; *biomarkers@sciconmeetings.com*.

August

1–3—ISSAT International Conference on Data Science and Intelligent Systems (DSIS 2019), Las Vegas, Nevada
For more information, visit *www.issatconferences.org/dsis2019.html* or contact Michelle Pham, P.O. Box 281, Edison, NJ 08818; *michelle@issatconferences.org*.

September

20–21—European Dental Summit and Dental Marketing, London, United Kingdom
For more information, visit *www.lexisconferences.com/dentalsummit* or contact Riya Sen, London UK, London, International 75062, UK; 7401034497; *Dentalsummit2019@gmail.com*.

The following events are the latest additions to the ASA's online calendar of events. Announcements are accepted from education and not-for-profit organizations only. To view the complete list of statistics meetings and workshops, visit *www.amstat.org/dateline*.

* Indicates events sponsored by the ASA or one of its sections, chapters, or committees

›› Indicates events posted since the previous issue

***23–25—2019 ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC**
For more information, visit *ww2.amstat.org/meetings/biop/2019* or contact ASA Meetings, 732 North Washington St., Alexandria, VA 22314; *meetings@amstat.org*.

***26–27—63rd Annual ASA/ASQ Fall Technical Conference, Gaithersburg, Maryland**
For details, visit *www.falltechnicalconference.org* or contact Adam Pintar, 100 Bureau Drive, Gaithersburg, MD 20899; *adam.pintar@nist.gov*.

October

10–12—The 3rd International Conference on Statistical Distributions and Applications (ICOSDA 2019), Grand Rapids, Michigan
For more information, visit *people.cst.cmich.edu/lee1c/icosda2019* or contact Felix Famoye, Department of Mathematics, Mt. Pleasant, MI 48859; *felix.famoye@cmich.edu*.


SAN DIEGO, CALIFORNIA

»18–20—5th International Researchers, Statisticians, and Young Statisticians Congress, Kusadasi, Turkey
For details, visit *www.irsysc2019.com* or contact Onur Köksoy, Department of Statistics, Izmir, International 35140, Turkey; *onur.koksoy@ege.edu.tr.*

November

»4–5—3rd International Conference on Mental Health, Chicago, Illinois
For details, visit *https://mentalhealthconference.euroscicon.com* or contact Lisa Turner, 9599 Skokie Blvd., Skokie, IL 60077; *mentalhealthmeet2019@gmail.com.*

December

***2–6—75th Annual Deming Conference on Applied Statistics, Atlantic City, New Jersey**
For details, visit *deming conference.org* or contact Din Chen, 325 Pittsboro St., Chapel Hill, NC 27599; *dinchen@email.unc.edu.*

12–15—11th International Conference on Multiple Comparison Procedures, Taipei, Taiwan
For more information, visit *www.mcp-conference.org* or contact Jason Hsu, 1 Health Plaza, East Hanover, NJ 07936; *mcp2019@mcp-conference.org.*

26–30—International Indian Statistical Association 2019 Conference, Mumbai, India
For more information, visit *iisa2019.iisaconference.org* or contact Veera Baladandayuthapani, University of Michigan, Ann Arbor, MI 48109; (734) 764-5702; *IISA2019@intindstat.org.*

27–29—2nd International Conference on Applied Statistics (ICAS) 2019, Dhaka, Bangladesh
For details, visit *www.isrt.ac.bd/icas2019* or contact Shafiqur Rahaman, Institute of Statistical Research and Training, Dhaka, International 1000, Bangladesh; *shafiq@isrt.ac.bd.*


Built around the 17th century Mughal period, Lalbagh Kella, also known as Lalbagh Fort, is one of the oldest historical buildings in Dhaka.

2020

January

***6–8—2020 International Conference on Health Policy Statistics (ICHPS), San Diego, California**
For more information, visit *ww2.amstat.org/meetings/ichps/2020* or contact ASA Meetings, 732 North Washington St., Alexandria, VA 22314; *meetings@amstat.org.*

June

21–23—The Fifth Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI), St. Louis, Missouri
For details, visit *www.math.wustl.edu/~kuffner/events.html* or contact Todd Kuffner, 1 Brookings Drive, Campus Box 1146, Saint Louis, MO 63130; *kuffner@wustl.edu.*

24–27—5th International Workshop on Functional and Operatorial Statistics (IWFOS 2020), Brno, Czech Republic
For details, visit *iwfos2020.sci.muni.cz* or contact David Kraus, Kotlárská 2, Brno, International 611 37, Czech Republic; *david.kraus@mail.muni.cz.*

25–27—Open Problems in Parametric Likelihood-Based Inference, St. Louis, Missouri
For details, visit *www.math.wustl.edu/~kuffner/events.html* or contact Todd Kuffner, 1 Brookings Drive, Campus Box 1146, Saint Louis, MO 63130; *kuffner@wustl.edu.*

July

5–10—International Biometric Conference (IBC), Seoul, South Korea
For more information, visit *www.biometricsociety.org/2018/07/ibc-2020-seoul-preview* or contact Kristina Wolford, 1120 20th St. NW, Suite 750, Washington, DC 20036; *conference@biometricsociety.org.* ■

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.*

Maryland

■ The National Center for Health Statistics is seeking a Director for the Division of Health and Nutrition Examination Surveys. The Division is responsible for the National Health and Nutrition Examination Survey (NHANES), a comprehensive survey producing statistics based on direct physical measures. Candidates must possess a MD, PhD, or other doctorate in statistics, public health, nutrition, or related discipline. Please contact Sayeedha Uddin at i*sx9@cdc.gov.* EOE.

■ SAS Programmer/Statistical Analyst, QuanTech Inc, Rockville MD. SAS programming and survey statistical analysis to provide data management and analysis support on large complex Federal surveys. Bachelor's or Master's Degree in statistics, biostatistics or mathematics; or in biology or environmental science with strong coursework in statistics. At least two years' relevant experience. Strong communication, interpersonal and creative problem-solving skills. Salary $60-$85K. *dcox@quantech.com.* EOE.

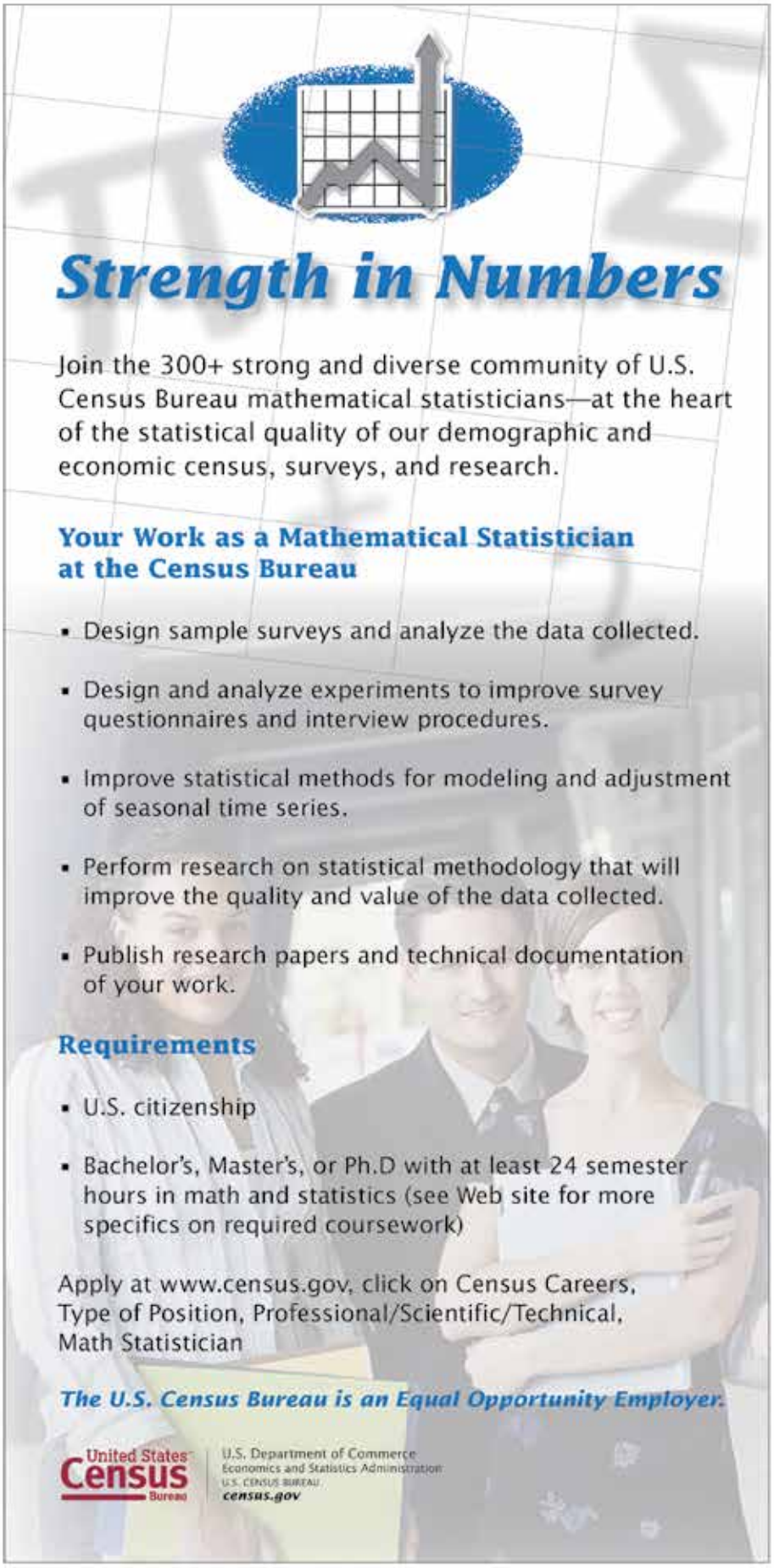
Massachusetts

■ The Department of Data Sciences (DS) at the Dana-Farber Cancer Institute seeks an experienced and motivated PhD biostatistician to engage collaboratively with investigators on basic science, animal model, and human research activities in multiple areas of adult oncology and HIV disease. PhD and at least 2 years

of collaborative experience are required. Prior experience in oncology and/or HIV is a plus. Please contact *Liz@jimmy.harvard.edu*. EOE.

New York

■ The Whitman School of Management, Syracuse University, is seeking applicants in the field of Business Analytics with strong interests in statistical methodology and its applications related to Big Data at the Full Professor rank. Qualified candidates must have earned a PhD and a distinguished publications record in Statistics, Econometrics, and functional areas of business. For position details and online application instructions, please go to *www.sujobopps.com/postings/78382*. EOE. ■



AMSTATNEWS

ADVERTISING DIRECTORY

Listed below are our display advertisements only. If you are looking for job-placement ads, please see the professional opportunities section. For more job listings or more information about advertising, please visit *www.amstat.org*.

misc. products and services

professional opportunities

software

SOCIAL CHATTER

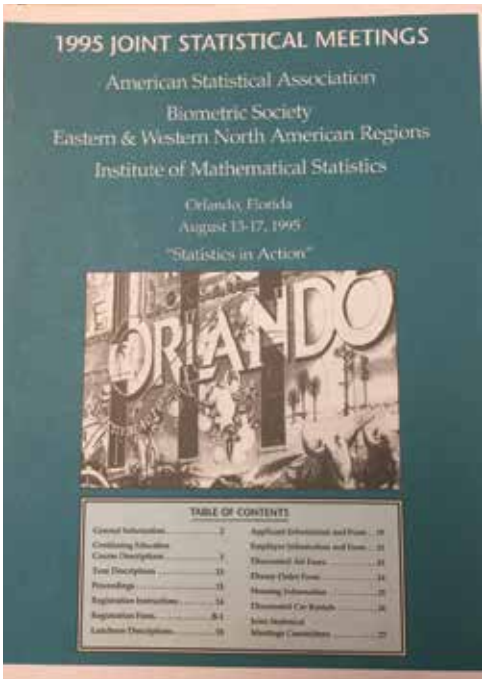
What do you remember most about your **first JSM**?

Stas Kolenikov • @StatStas
Getting @srmsasa @SocStat_AMSTAT GSS student award from Alan Zaslavsky @HarvardChanSPH

Diane Michelson • @statgrrl
I didn't know you had to register, so I just got the hotel and spent the weekend in New Orleans. Since then, I've been a docent for the first timers who get the registration process. 😂

Robin Mejia • @RobinMejia
Steve Fienberg. And the weird membership systems for bars in Salt Lake City.

....Just❤Michelle❤ • @Mick_Stat
1995. Hand written overhead 'slides'. Glad we have evolved!



A program from JSM 1995 in Orlando, Florida

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To view silly statistics memes on Instagram, created by ASA member **Sana Charania**, visit *www.instagram.com/stat_head.*

TELL US

Next month, we'll ask our followers: "What's something statisticians wish people worried about more?" Share your answers with us on social media. Be sure to tag @AmstatNews.

Qiuyi Wu
Crab cake in Mixture Night Party is pretty yummy

Paul Warren
Nothing #tequillaisbad

42nd Annual Midwest Biopharmaceutical Statistics Workshop

May 20–22, 2019 • Renaissance Hotel, Carmel (Indianapolis), Indiana

Statistics: Making an Impact

Thank you

The following individuals have made vital contributions to the success of the workshop

Workshop Chair
Vipin Arora of Eli Lilly

Past Chair Workshop
Alan Chiang of Celgene

Track Chairs

Biomarkers/Preclinical and Discovery
Ena Bromley of Biostatistics Solutions

Chemistry, Manufacturing and Controls
Hesham Fahmy of AbbVie

Clinical
David Manner of Eli Lilly

RWE/Programming and Data Visualization
Melvin Munsaka of AbbVie

Registrar
Cindy Lee of Eli Lilly

Treasurer
Wei Zhou of Eli Lilly

Student Session Co-Chairs
Veavi Chang, Brian Millen and Barry Katz

Cofounders
Charles B. Sampson (retired)
Mir Masoom Ali (retired)

Additionally, we would like to acknowledge the contributions of the session chairs and speakers, all of whom are listed on the website.

HALF-DAY SHORT COURSES:

Accelerating Drug Discovery Through Precision Medicine and Innovative Designs – Concepts, Rationales, and Case Studies by WEIDONG ZHANG (Pfizer), SANDEEP MENON (Pfizer/Boston University/Tuffs University)

An Introduction to Biomarkers for Statisticians – A Brief Guide to Utilizing the Most Appropriate Analytical Tools by ENA BROMLEY, LIN LI (BioStat Solutions)

MONDAY PLENARY SESSIONS

Statistical Leadership in The Changing Landscape of Drug Development - ALOKA CHAKRAVARTY, Director (Acting), (FDA)

Statisticians, Leadership and Teamwork - GARY SULLIVAN, Espirer Consulting LLC

The main tracks will include the **Clinical** which will cover topics on subgroup analysis, master protocols, and advanced topics in survival analysis; **Preclinical, Discovery and Biomarkers** which will include topics on Design, Analysis and Interpretation of Biomarker Studies; **Chemistry, Manufacturing and Controls** which will include topics on Biosimilars and Comparability, Stability, Bioassay, Reference Standards, and Sampling/SPC During PPQ, CPV; **Real World Evidence** which will include topics on Statistical Approaches to Big Data Research in EMR and Current Thinking and Practice on the Role of Real World Evidence in Decision Making; **Programming and Data Visualization** which will focus on New Tools and Cross-Functional Collaboration. Each track will have three sessions of at least two hours in length with 3–5 speakers. Speakers have time to discuss topics in more detail than at many conferences, and participants will have many opportunities to ask questions and participate in discussions. Additionally, speakers from the FDA, other governmental agencies, and academia will be invited to give presentations.

A STUDENT-FOCUSED SESSION organized by Veavi Chang and Brian Millen of Eli Lilly and Barry Katz of IUPUI will be part of the workshop.

STEPHEN RUBERG (Analytix Thinking, LLC) is this year's banquet speaker. He will discuss *The Need for Analytical Science*

Contributed posters are being accepted for the poster session, to be held on Tuesday, with Ying (Grace) Li of Eli Lilly serving as the chair. The poster session focuses on drug development. Posters will be considered on any biopharmaceutical statistical topic. Students may submit posters for the Charlie Sampson and Mir Ali Poster Award. Deadline for submission is April 12, 2019.

www.mbswonline.com

Questions not addressed on the website can be sent to the Publicity Chair, Melvin Munsaka (*melvin.munsaka@abbvie.com*) or the 2019 Workshop Chair, Vipin K Arora (*varora@lilly.com*)

MBSW was co-founded by Charles B. Sampson and Mir Masoom Ali and is co-sponsored by the ASA Biopharmaceutical Section. MBSW, which was founded as a conference to meet the needs of U.S. pharmaceutical industry statisticians in the Midwest has, wel¬comes attendees from across the United States and around the world.

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