November 2019 • Issue #509

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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.

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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*.

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Statistics at the Tipping Point: Data for Good in Environmental Advocacy

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.*

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ASA leaders are ASA members who volunteer in some way, primarily as chapter or section officers or committee chairs or members. We appreciate your service and aim to make your volunteer experience easy by providing materials you need in one convenient location. If you cannot find what you are looking for on the Leader HUB or would like additional resources added to this page, please contact us and let us know how we can assist you.

The HUB is on the ASA Community at ***https://community.amstat.org/asaleaderhub/home.***

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Making a Statistical Impact with Text Data

Karen Kafadar

One of the great pleasures—and benefits—of belonging to the ASA is the opportunity to hear about problems on which we can make an impact. In this column and the next, I'll mention some of these, which will include progress on the 2019 initiatives (impact, disinformation, diversity), pointing us to new challenges to pursue.

One big challenge to which statistics can contribute solutions concerns text data. Surveys and questionnaires prefer specific-choice questions (e.g., "On a scale of 1 to 10, rate …") to avoid open-ended responses (e.g., "Other (specify) …."). But in many areas, text responses may be preferable or even essential. For example, a physician may ask the patient to describe the level and location of discomfort or the times when pain is greatest. The data from such responses can be important for evaluating a treatment remedy under consideration (e.g., under what patient conditions is the treatment likely to be "successful," where "success" also must be quantified and may depend on the patient).

In more complicated situations, a clinician must mark on a schematic of the body the location and size of bruises, lacerations, and other physical aberrations, which are translated into text (e.g., "upper right arm"). How do we use these data as features for classifying patients into categories of severity of physical condition?

This problem recently came to my attention from a professor in our school of nursing who often is asked to testify about the features associated with attempted strangulation of an assault victim. The forensic nurse's testimony is important because nonlethal strangulation may result in a felony conviction in most states. If the nurse testifies that the features found on physical examination of the victim are consistent with nonlethal strangulation, the judge may order the person charged to remain in jail until trial. So, these features can be crucial evidence to support a conviction (otherwise the perpetrator could be released, free to strike again). Electronic health records generally have these data issues in multiple formats.

The challenges of text data arise with personal health and recommender systems also. Increasingly, mobile devices are collecting personal fitness data, and users want to know how the data can be associated with how they feel emotionally and physically.

Combinations of machine learning and natural language processing algorithms have been applied to such data, and both offer opportunities for statisticians to evaluate their accuracies and uncertainties.

Another example arises in experiments to assess the accuracy of eyewitness identification. In such experiments, a "mock eyewitness" (lab participant) views a video of a crime, and then sees a lineup of, say, six photos of possible perpetrators. Experimenters believe strongly that confidence in the identification is related to accuracy, so they ask their participants, "How confident are you in your identification?" Participants' choices are "0% confident," "20%," "40%," "60%," "80%," or "100% confident." One's answer of "100%" may be someone else's (like a statistician's) "60%" (statisticians are not accustomed to claiming "100% certain on anything).

Moreover, such experiments are often conducted with university psychology students who may have experience with quantifying their confidence with such a scale, but police officers know the typical victim or eyewitness asked to identify a perpetrator from a lineup will have no clue what "60% confident" means. So, in real life, the officer can only ask the eyewitness to describe in words, "How confident are you?" The response may depend not only on factors specific to the crime and eyewitness (e.g., time between the crime and identification process, difference in ages and races between eyewitness and perpetrator, the eyewitness's tendency toward conservative versus confident responses), but also on the officer's interpretation of the response. One officer might interpret, "I'm pretty sure" as "80% confident," while another officer might interpret it as "90%" or "100% confident." Further, the quantitative translation of that response may depend on other comments from the eyewitness during the identification process.

How do we extract useful information from such responses so we will know whether to advise police officers to trust or dismiss such responses about "confidence"? We need methods to extract

the relevant information quickly, process text data mathematically, summarize the data, and ultimately interpret it in the context of other features. And we will need to translate our findings into language others can understand!

Some of the same issues related to processing text data arise in classifying news articles as either genuinely informative, mostly informative apart from unintentional reporting errors, or intentionally inaccurate. Such is the task of the "disinformation" initiative being co-chaired by former ASA President Jessica Utts and Duke Computer Scientist and Associate Chair Jun Yang. How "robust" are news stories to misinterpretations? In fact, how do we even "measure" degrees of misinterpretations so we can minimize the errors when the news story is read? What "loss functions" or "penalty terms" apply to such misinterpretations of text data?

Members of this task force are collecting resources related to documented instances of "disinformation" and open problems related to the classification of news items from multiple sources. They will be turning that information into a white paper with a list of possible research directions ripe for collaboration between computer scientists and statisticians. They also are creating a website of resources pertaining to studies on "fake news," which will be made available to ASA members. The translation of findings for nonstatisticians is even more critical here, as it affects not just our research collaborators, but also the general public. A subset of the task force is investigating mechanisms for effectively educating the public about how to recognize attempts at fake news.

Social media data are another source of text data, and the analysis of such data raises additional complications. In a 2019 *American Journal of Public Health* paper, Quynh Nguyen and her colleagues used geotagged Twitter data to study associations between sentiments and health behaviors expressed in the tweets and aggregate county-level health outcomes such as rates of mortality, obesity, and substance abuse.

Analyses of such data raise issues we need to consider. First, Steven Piantadosi and his colleagues warned us in their 1988 *American Journal of Epidemiology* paper of "The Ecological Fallacy" about drawing inferences from aggregate data for individual outcomes. Second, users of social media in a given county are not likely to be representative of the county's population (the authors acknowledge "only 23% of all internet users and 20% of the US adult population use Twitter"). The need for the spatial origin of the tweets was a further limitation. The authors note from previous studies that only 1–2 percent of tweets may contain GPS information and that "users who enable geotagging of their tweets differ demographically from those who do not."

Nonetheless, such analyses may provide ideas for designing and analyzing future studies. (Incidentally, representativeness may possibly undermine some experiments in eyewitness identification. Often, they use online platforms to collect voluntary participants as their "mock eyewitnesses." How many of you have signed up to participate in an online experiment for a modest compensation for your time?)

On the enormous quantities of data in the life sciences, Dave Dunson said in an article titled "Boston University to Hold Symposium on Statistics and Life Sciences," published in the October 2019 issue of *Amstat News*, "Statistics has had a fundamental impact on this paradigm shift in the way life science is being conducted; there is no use in collecting such data unless we have reliable and reproducible methods for analysis and interpretation. The development of 'big data' statistics has freed up scientists to be creative in developing and exploring new sources of data." With those developments come the challenges of characterizing their accuracy in translation and minimizing the costs associated with misinterpreting them.

What other broad areas are ripe for statistical analysis? David Williamson is chairing the Impact Initiative, which includes a "challenge" to our community to propose areas in which statistics is well positioned to make a big impact. For example, 30 years ago, one might have proposed genomics and proteomics; 10 years ago, perhaps it might have been the application of statistical methods and design to validating forensic evidence. Today, perhaps "disinformation" or processing text data generally might make the list. If you offer your proposal to Impact Initiative committee members, you may see a community of statisticians making an impact in this world by working on it in the years ahead. Keep those ideas coming—we look forward to seeing them!

Editor's Note: Barry Graubard, David Hoaglin, and Jessica Utts contributed to this column.

November *TAS* Spans Range of Topics

Dan Jeske, *The American Statistician* Editor

The November 2019 issue of *The American Statistician* features 11 articles and two letters to the editor.

The General section has three articles. The first looks into tests for trends over time in multinomial probabilities. A test of no trend versus the alternative of a trend for at least one of the categories is discussed. The second article formulates a two-sided test by decomposing the alternative into multiple directional alternatives. The test procedure is a set of rules that maps the rejection decision to a specific alternative. The third article addresses the replication crisis through a Bayesian lens. A Bayesian replication factor developed for a two-group setting is extended to a more general multi-group setting.

The Statistical Practice section has two articles. The first is concerned with missing data issues in logistic regression. Nonignorable missing responses are considered and a method to reduce the bias in the estimated regression coefficients is presented. The second paper delves into power and sample size considerations for linear mixed models. Mapping the linear mixed model to a multivariate linear model is key to making these calculations more tractable.

There are two articles in the Teacher's Corner. The first provides powerful geometric intuition for the tail formula used to compute the expected value of a random variable. Several interesting examples are given, and multivariate extensions are discussed. The second paper is a comparative review of alternative textbooks that might be used for an undergraduate course in nonparametric statistics.

An article in the Statistical Computing and Graphics section proposes a framework for assessing statistical computing tools. The framework could be useful for developers of statistical tools and/or educators using statistical tools in their courses.

An article in the Interdisciplinary section uses spatial generalized linear models to study the allocation of foreign aid to Malawi. The purpose of the modeling effort is to understand whether the aid is being delivered efficiently to the areas that most need it.

An article in the History Corner reviews the history of industrial statistics and profiles several pioneering industrial statistics organizations.

A short technical note in this issue revisits the mean value theorem for vector-valued estimating functions. The article is a follow-up to a previously published *TAS* paper on this topic.

The November issue concludes with two letters to the editor. The first addresses a *TAS* paper that modeled baseball slugging percentage and the second raises an interesting question about how power calculations should proceed if a significance threshold cutoff (e.g., .05) is to be avoided.

To view the articles, visit *www.tandfonline.com/toc/utas20/current* or log in at *www.amstat.org*. ■

Left: 2019 educational ambassadors Carlos A. Diaz-Tufinio (Mexico) and Vikash R. Satyal (Nepal) with Drew Baughman, Committee on International Relations in Statistics chair.
Middle: Saleha Habibullah, 2018 educational ambassador from Pakistan, participates in a session at JSM.
Right: Geert Molenberghs, chair of the ASA Committee on International Relations; Saleha Habibullah, 2018 educational ambassador from Pakistan; Seksan Kiatsupaibul, 2018 educational ambassador from Thailand; and David Williamson, an ASA Board member, meet at the Committee on International Relations in Statistics Meeting during JSM 2018 in Vancouver.

Educational Ambassadors Sought

The ASA Committee on International Relations in Statistics is seeking qualified nationals from Ukraine, Democratic Republic of Congo, Uganda, Kazakhstan, Turkmenistan, and/or Central African Republic to serve as 2020 Educational Ambassadors.

In 2020, the ASA will select two educational ambassadors to receive funding to attend the Joint Statistical Meetings and take one or more continuing education (CE) courses in an emerging area of research. The ambassadors will then return to disseminate the subject matter in their home country and/or region.

The application deadline is December 31.

Selected ambassadors will be expected to complete the following by December 2021:

- Attend the 2020 Joint Statistical Meetings in Philadelphia, Pennsylvania, to take CE courses in an emerging area of statistics research. To view CE courses offered in 2019, search for "Continuing Education Course" at *ww2.amstat.org/meetings/jsm/2019/onlineprogram.*
- Return to their home country and, within the next year, offer the equivalent of a one-semester master's-level class with no fewer than 10 students on the subject matter of the CE course and write lecture notes in the language locally deemed most appropriate. Ambassadors are expected to repeat the offering at least once. The committee understands there can be practical or organizational considerations that make this a challenging requirement, so we are prepared to work with the ambassadors to devise an appropriate plan. The ASA will also investigate the possibility of providing further assistance through recorded webinars related to the CE course material.
- Provide periodic updates and submit a final report by December 2021 to the ASA through the Committee on International Relations in Statistics and the ambassador's home institution. The report should describe how the transfer of knowledge was accomplished and how the ambassador invited statisticians from their country to work with them on the subject matter of their course.

The ASA will arrange and pay for the selected ambassadors' airfare, hotel, meeting registration, and CE course registration. The ASA also will reimburse the visa application fee and provide a $500 stipend.

Candidates for the ambassadorship must hold a PhD or equivalent degree in statistics or a related field and be employed at the level of assistant or associate professor at a recognized university or research organization promoting the teaching and application of statistics.

Interested candidates should send the following to committee chair, Drew Baughman, at *alb1@cdc.gov:*

1. A curriculum vitae
2. A proposal (at most two pages) describing how the ambassadorship will help disseminate knowledge of statistics in your country and how the ASA's expectations set forth above will be implemented upon your return home
3. A letter from the head of your academic unit (e.g., department chair, director, or dean) indicating institutional support for your dissemination plan

For more information or to become involved, contact Baughman. ■

Q&A

Diagnosing and Treating Noncommunicable Diseases Around the World

Kelly H. Zou, Jim Z. Li, and Nikuj (Nik) Sethi

Kelly H. Zou, vice president and head of medical analytics and insights at the Upjohn Division of Pfizer Inc.; Jim Z. Li, senior director of medical analytics and insights at the Upjohn Division of Pfizer Inc.; and Nik Sethi, business technology lead at the Upjohn Division of Pfizer Inc., taught a three-part web-based lecture on generating and harnessing real-world evidence (RWE), health information technology (HIT), and artificial intelligence (AI). The lecture was jointly sponsored by the Biopharmaceutical, Health Policy Statistics, and Statistical Learning and Data Science sections. Here, Richard Zink from the Biopharmaceutical Section asks the lecturers a few follow-up questions.

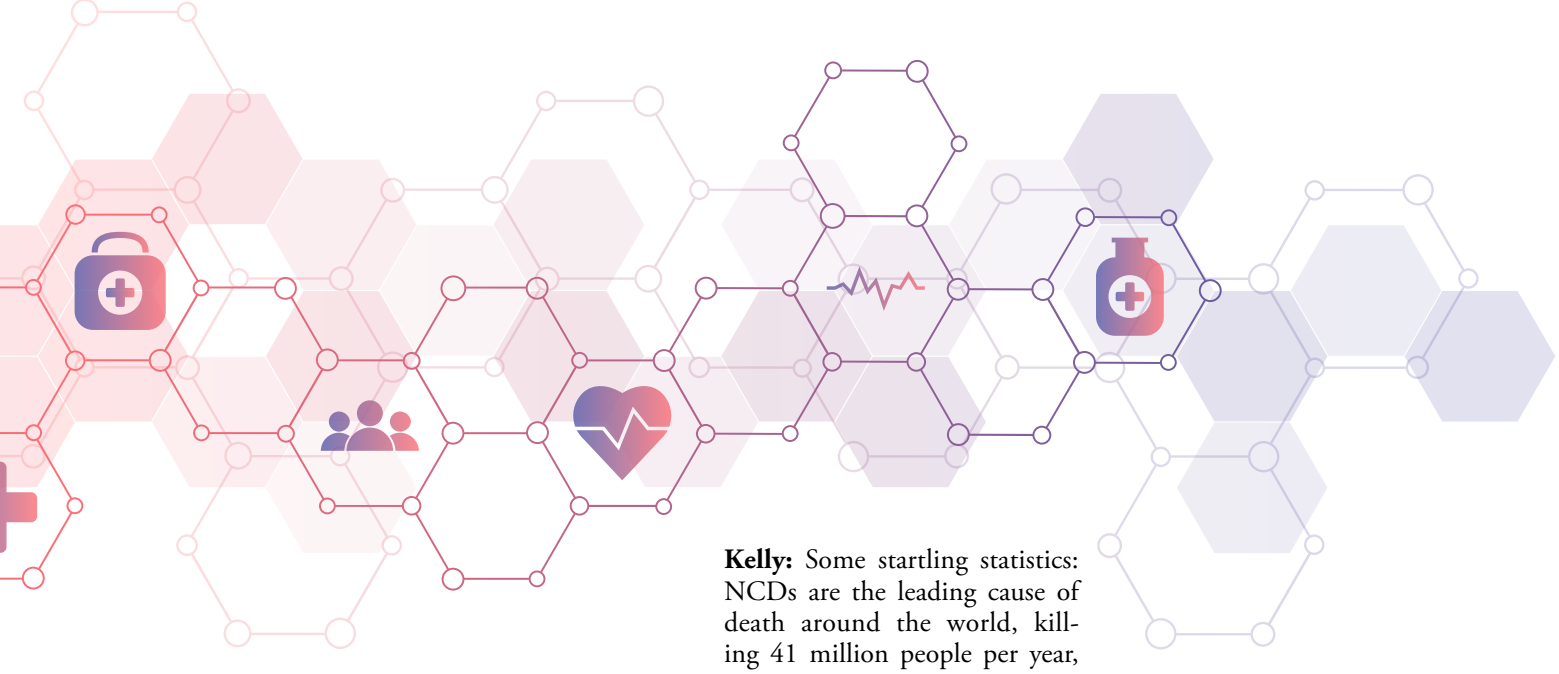
Kelly, describe your recent work since the interview on ASA Biopharm's Podcast in 2017.

My colleagues here and I have been busy looking for ways to improve treatment for noncommunicable diseases, known as the NCDs, around the world. According to the World Health Organization (WHO), "noncommunicable or chronic diseases are diseases of long duration and generally slow progression." According to the WHO, there are four major NCD categories: cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma), and diabetes.

Give us a brief overview of your current roles and how you became interested in statistics, data science, and business technology.

Jim: Kelly and I both work in medical analytics and insights, research, development, and medical in Pfizer's Upjohn venture.

Nik: I am the BT lead for Upjohn's research, development, and medical functions and a peer of both Jim and Kelly. Upjohn's mission is relieving the burden of NCDs with trusted, quality medicines for every patient, everywhere. We seek to leverage our portfolio, experience, and expertise to become the trusted partner of choice to all stakeholders committed to improving patient health. We aim to significantly expand access to our high-quality medicines. Our goal is to treat 225 million new patients



by 2025, and it appears to be an achievable goal to make a global impact in health care.

Jim: While Kelly is a statistician by training, our career paths took us from medicine, health care policy, [and] business technology to health care innovation. In each step of the way, statistics, data science, and analytics are not only important tools and methodological bases, but also infrastructure and enablement building. Therefore, our diverse backgrounds and capabilities are complementary, especially for interdisciplinary and collaborative work in the spirit of being fast, focused, flexible, and fun.

Describe some of the opportunities and challenges of RWE for non-communicable diseases, known as the NCDs.

Jim: According to the World Health Organization, there are four major non-communicable disease categories. Here, the word noncommunicable means these diseases are not contagious. The first is cardiovascular diseases (like heart attacks and stroke). The second is cancer. The third is chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma). The fourth is diabetes.

Kelly: Some startling statistics: NCDs are the leading cause of death around the world, killing 41 million people per year, equivalent to 71% of all deaths globally, with more than three quarters (32 million) occurring in low- and middle-income countries. The devastation of such a "silent killer" increasingly becomes a global health burden. In the US, cardiovascular diseases accounted for 840,678 deaths in 2016 (i.e., approximately 1 of every 3 deaths, *bit.ly/2oPYVBl*). In 2010, the global cost of CVD is estimated at $863 billion, and it is estimated to rise to $1,044 billion in 2030.

Nik: Given the prevalence of NCDs globally—including emerging markets, Greater China, and developed markets—developing new capabilities that are practical and built on accessible technologies is key to identifying patients that may be unknowingly impacted by an NCD, educating health care providers on treatment options for NCDs—above and beyond a single disease—and working with payers to demonstrate through RWE and technology capabilities how addressing NCD burden broadly can provide significant value in the health care system. These opportunities make our work ever more important, particularly in developing countries in the emerging markets.

How can RWD be useful for diagnosing and treating NCDs?

Kelly: For medical researchers serving in industry, government, and academia around the world, RWD, big data, and digital capabilities and technologies must be enabled and elevated globally, especially when randomized controlled trials (RCT) become increasingly costly. There are tremendous opportunities around the world to gain insights through RWE and digital information outside RCTs.

Jim: For example, in developing countries in Asia, Latin America, Africa, and the Middle East, there is a large population that can benefit from breakthroughs that change patients' lives. The expansion of the middle class, the desire for quality medicines and therapies, and the rise of NCDs are the realities these regions face every day. Furthermore, the advances in information and telecommunication infrastructures have also drastically improved, which has enabled a massive amount of RWD to be generated from many sources outside the RCT framework. Such data sources include electronic health records, patient registries, patient-reported outcomes, and digital apps.

Nik: Speaking of opportunities but at the same time challenges, cutting-edge innovation can be enabled when data are available or in aggregate. In this new era of data as precious as oil, data integration, access, interoperability, standardization, quality control, security, and privacy protection are important issues where data is available. A major barrier, however, is simply accessing data due to a diverse set of sources and repositories of data. As we move into a new era of RWD in the health care landscape, a key challenge is going to be how to make data accessible to the right parties at the right time to only be used as prescribed. Finally, once data is accessible, deriving algorithms that are robust and tailored toward the specific patient populations will enable patient identification and help address challenges around the patient journey. The challenge we are facing as an industry is the shortage of talent in both data translators, who are like shepherds with subject-matter expert knowledge, and data scientists.

AI is a commonly used term these days. Most statisticians likely think of it in terms of predictive modeling. What other uses of AI are there? Are there examples of AI that are being used in practice? What does the future hold for AI?

Nik: From a consumer's perspective, AI has in many ways become pervasive in enabling mobile devices and applications running on the mobile devices to be more intelligent. For instance, I recently got a text message from a number that was not saved in my contact list, and the phone (searching through my other messages and emails) suggested who the person could have been and was correct. That has a direct impact on me, saving me time and giving me a more personal relationship.

From a health care perspective, AI is having a profound impact across the spectrum, from research and drug development to patient care—including health care management. A great example is in medical imaging and diagnostics, in which technologies are being used to detect skin cancer from photos taken by patients (see *www.skinvision.com*). The key question for leaders in the industry is how to put such a complex set of information together within the unique country-specific health care systems and data repositories, which will improve diagnoses and treatment.

Jim: The different languages in those countries may make variables and formats in databases harder to standardize. These countries also tend to have increased data and privacy protections, as well as diverse data formats sitting in patient registries without being standardized and connected (see *www.bmj.com/content/360/bmj.j5262*).

Kelly: Let me give some final closing remarks here. It is certainly an exciting era for statisticians and data scientists to make meaningful and impactful contributions to combat these chronic and debilitating NCDs. Skillful statistics and data science capabilities are critical in gaining insights from RWE. For digital and technological innovations that can target therapies and optimal treatment strategies, it is imperative to foster collaborations and partnerships. ■

EDITOR'S NOTE
The views expressed here are the authors' and do not necessarily represent those of Pfizer Inc.

MORE ONLINE
Kelly Zou was interviewed for ASA Biopharm's Podcast in 2017. Listen to it at *www.buzzsprout.com/16296/567031-episode-45-kelly-zou.*

ASA, in cooperation with the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA) under a grant from the National Science Foundation (NSF) is pleased to announce a Senior Research Fellow Program for 2020.

The Fellowship Program at BLS allows research fellows to come to the BLS and use BLS data and facilities and interact with BLS staff. More information is available on the BLS website at *http://www.bls.gov/osmr/asa_nsf_bls_fellowship_info.htm* or in our brochure at *https://www.amstat.org/asa/files/pdfs/YCR-ASANSFBLSFellowshipProgram.pdf*

Application Deadline: January 3, 2020

The Fellowship Program at BEA offers a unique opportunity to perform research at the Bureau of Economic Analysis. BEA produces key economic statistics that influence government policy, forecasting and business investment. Fellows will have access to BEA data and the expertise of BEA staff. More information is available at:
https://www.bea.gov/research/fellowship-program or in our brochure at
http://www.amstat.org/asa/files/pdfs/YCR-BEA.pdf

Application Deadline: January 3, 2020

Eligibility
An academically recognized research record and considerable expertise in the area of proposed research required. U.S. government employees are not eligible to apply. Applicants must be affiliated with a U.S. institution.

Condition of Appointment/Benefits
Research will be conducted at the government agency. The stipend received is commensurate with qualifications and experience. Term of appointment is flexible. Fringe benefits and travel allowances are negotiable.

Students read materials from exhibitors during StatFest 2019.

Students listen to Eric Boerwinkle welcome them to StatFest 2019.

Exhibitors connect students to opportunities during StatFest 2019.

StatFest 2019: Meant to Be

StatFest 2019 Planning Committee

Tropical Storm Imelda dropped more than 30 inches of rain in southeast Texas September 17–19. Conference organizers strongly considered canceling StatFest 2019 due to widespread flooding and Federal Aviation Administration–mandated flight stoppages. But on September 20, the grey clouds began to roll away and the high water began to recede. Planning committee chair, Adrian Coles, said, "The water receded much faster than expected! It's almost as if StatFest 2019 was meant to be."

On September 21, the ASA Committee on Minorities in Statistics (CMS) held the 19th annual StatFest conference. StatFest is a one-day event aimed at encouraging undergraduate students from historically underrepresented groups to consider graduate studies and careers in statistics and data science.

This year's event was hosted by the University of Texas Health Science Center at Houston (UTH). Participants from the Austin campus joined remotely via the institution's interactive television connection.

Despite Imelda and poor weather conditions, more than 120 participants attended: approximately 44 percent undergraduate students; 19 percent graduate students; and 37 percent professionals in academia, government, or industry.

The program started with a welcome and opening remarks from Eric Boerwinkle, dean of the UTH School of Public Health, and Rob Santos, 2021 president of the American Statistical Association.

Renee Moore of Emory University Rollins School of Public Health was this year's keynote speaker, and Hadley Wickham of RStudio was a featured speaker.

Two panel discussions introduced participants to diverse statistics and data science careers in

academia, government, industry, and consulting. Folefac Atem of UTH Dallas shared best practices on preparing for graduate school, and Jemar Bather of Harvard T.H. Chan School of Public Health provided practical guidance on networking and intrapersonal skills.

There was a student-only session, titled "The Graduate Student Experience," that consisted of panelists who are enrolled in master's and doctoral programs in statistics and data science. During the session, faculty and professionals attended a parallel session that explored ways to help the represented organizations and institutions become more diverse and inclusive.

Other highlights included a poster session, an ice cream social, and an exhibition area.

Throughout the day, participants were able to connect with representatives from more than 10 graduate programs and professional organizations.

Although attendance was approximately 20 percent less than expected due to Imelda, organizers received positive feedback from attendees during and after the event—suggesting #19 was another impactful event in the history of StatFest.

StatFest 2020 is scheduled to be held at Eli Lilly and Company in Indianapolis, Indiana, and StatFest 2021 is scheduled to be held at Columbia University in New York.

Read more about StatFest 2019 on the ASA's Committee on Minorities in Statistics webpage at *https://community.amstat.org/cmis/events/statfest/statfest-2019*. ■

COSSA HEADLINES

A monthly look at what's new and noteworthy in social science policy

Changes Coming to NSF's Social, Behavioral, and Economic Sciences Directorate

The Social, Behavioral, and Economic Sciences Directorate (SBE) at the National Science Foundation (NSF) will be releasing changes to several of its longstanding programs in the coming weeks.

During the Consortium of Social Science Associations (COSSA) Headlines webchat (see *bit.ly/2MpyXh2*), Arthur Lupia—assistant director for Social, Behavioral, and Economic Sciences—gave a preview of what those changes will entail.

The changes, which will go into effect for deadlines and solicitation due dates after January 1, 2020, are intended to help policymakers and members of the public better understand the value of the research funded by SBE. However, the repositioning is not intended to dramatically alter the types of research SBE supports.

According to Lupia, NSF will release a letter explaining the changes and include descriptions of the new programs. In addition, the directorate will hold a series of webinars to answer questions from the social science community about the repositioning effort. COSSA will share the details of both the letter and webinar series when they are made available.

Of the eight existing programs to be changed, the directorate has only released full details of the changes to the political science program, which will be split into "Accountable Institutions and Behavior" (*bit.ly/2Bm1RZ8*) and "Security and Preparedness" (*bit.ly/2oEjUqR*).

For more information or to sign up for additional webinars, visit *www.cossa.org*. Follow #COSSAHeadlines on Twitter for details. ■

MORE ONLINE

The COSSA webchat is available at *bit.ly/2MpyXh2*.

Slides of the webchat can be viewed at *bit.ly/2MqRb1Q*.

A Tour of the International Statistics Scene

Jana Asher, Committee on International Relations in Statistics Member and Slippery Rock University Assistant Professor

As the world's largest community of statisticians, the American Statistical Association is an amazingly diverse body of professionals. Between the sections, which focus on particular statistical subfields; the chapters, which provide a regional platform for communication and collaboration; and the committees, which focus on specific ASA initiatives or outreach efforts—not to mention the in-person meetings and online communities—it is easy to believe pretty much everything going on in the statistics profession is represented here.

The world of statistics, however, extends far beyond the membership of the ASA—a fact that has been recognized by the ASA leadership for a long time. To make sure the ASA membership is aware of what happens in the statistics profession in other parts of the world, the ASA formed the Committee on International Relations in Statistics (CIR) in 1979. Briefly, the mission of the CIR is:

> To identify goals, develop policies, and plan projects that foster activities involving international communications, exchange, and joint development with professional statisticians, societies, and other organizations in countries throughout the world; to keep ASA members and others informed of these activities and to foster their involvement in them.

Connecting US Statisticians to the World

The CIR helps the ASA membership interact with the international community mainly through the Educational Ambassador Program (EAP). The CIR launched the EAP in 2005 with the following goals:

- Welcome new international members to the American Statistical Association
- Create trust between the ASA and other national and international statistical societies
- Advance lasting collaboration between the ASA and those societies to allow ongoing exchanges of knowledge

Every year, the CIR recruits a number of Educational Ambassadors (EAs) from foreign countries and subsidizes their attendance at the Joint Statistical Meetings. It is the CIR's hope that ASA members will interact with the EAs at the Joint Statistical Meetings, learning more about the statistical community in their home countries.

At JSM, the chosen EAs attend a continuing education (CE) course or courses in an emerging area of research (unknown in their own country) and receive ASA full membership for one year. Each EA then returns to their home and, within the next year, teaches the subject matter of the CE course(s) taken to a class of no fewer than 10 students at the master's-degree level. The EA then submits a written report to the Committee on International Relations in Statistics about their experience in the program. Finally, during the following academic year, the EA repeats the class he or she taught at least once, either in person or through webinars.

The EA program allows ASA members to learn about the statistics scene in a few specific countries each year. However, there is also an internationally focused community of statisticians from across the world that connects frequently through international professional societies.

International Statistics Professional Societies

There are multiple international organizations of interest to statisticians and data scientists, the oldest of which is the International Statistical Institute (ISI, *www.imstat.org*). Elected membership in the ISI is prestigious and requires letters of recommendation from three current members; regular membership is also available. The ISI produces several publications—including the *International Statistical Review*—and serves as an umbrella organization for the Bernoulli Society for Mathematical Statistics and Probability (*bernoulli-society.org*), International Association for Official Statistics (*iaos-isi.org*), International Association for Statistical Computing (*iasc-isi.org*), International Association for Statistical Education (*iase-web.org*), International Association of Survey Statisticians (*isi-iass.org*), International Society for Business and Industrial Statistics (*isbis-isi.org*), and International Environmetrics Society (*environmetrics.org*). Much like sections of the American Statistical Association, each of these organizations holds meetings at a big ISI convention called the World Statistics Congress that is held once every two years in a different country. The next World Statistics Congress will be in the Hague (The Netherlands), July 11–15, 2021.

You might have noticed there isn't a Bayesian Association under the ISI umbrella. The International Society for Bayesian Analysis (ISBA, *bayesian.org*) is a separate organization, founded in 1992, that focuses specifically on Bayesian analysis techniques. There are chapters of the ISBA in Australia/Oceania, Brazil, Chile, East Asia, India, and South Africa; ISBA also boasts several topical sections, including the Section on Biostatistics and Pharmaceutical Statistics and Section on Economics, Finance, and Business. The ISBA holds world meetings every two years; in 2022, they will be in Montréal (Canada) and, in 2024, they will

be in Venice (Italy). ISBA also produces the journal *Bayesian Analysis* (*projecteuclid.org/euclid.ba*).

If biostatistics is your focus, you might want to check out the International Biometric Society (IBS, *biometricsociety.org*). Unlike the ISI, the IBS operates primarily through its regional sections, some of which are country based (e.g., Italian, Polish, Japanese) and some of which are larger (e.g., North African). In the United States, there are two regional sections: the Eastern North American Region (ENAR, *enar.org*), which includes all the United States and Canada roughly east of Denver, Colorado, and the Western North American Region (WNAR, *wnar.org*), which includes the rest of the US and Canada. ENAR holds annual spring meetings, and WNAR holds an annual conference in June. IBS, like ISI and ISBA, holds a large world conference every two years; the next one will be in July of 2020 in Seoul (Korea). IBS also produces several top-quality peer-reviewed publications, including *Biometrics* (*bit.ly/2nTGJpX*) and *The Journal of Agricultural, Biological, and Environmental Statistics* (*bit.ly/2VQdhxw*).

Maybe you would prefer to become involved with a more field-specific organization. There are two that also fall under biostatistics: The Society for Clinical Trials (*sctweb.org*) and the International Genetic Epidemiology Society (*www.geneticepi.org*). Both societies focus on specific applications of biostatistics, both have an annual meeting, and both have an associated peer-reviewed journal. The Society for Clinical Trials will be meeting in Baltimore, Maryland, in May 2020, and the International Genetic Epidemiology Society is meeting in Hong Kong in July of 2020 (just prior to the IBS meeting in Seoul, South Korea, that year).

All these international societies serve similar functions for their members (i.e., organize meetings, publish journals, provide training opportunities, and generally build a professional community at an international level). The Casualty Actuarial Society (CAS, *www.casact.org*) takes on an additional role; they are a credentialing organization for actuaries. As is stated on their website, CAS members are experts in property and casualty insurance, reinsurance, finance, risk management, and enterprise risk management. If you are curious about what is required of an actuary, take a look.

In the Asian region, multiple countries have international statistical associations, including China (International Chinese Statistical Association, ICSA, *www.icsa.org/icsa*), India (International Indian Statistical Association, IISA, *intindstat.org*), and South Korea (Korean International Statistical Society, *statkiss.org*). Luckily for monolingual Americans, each of these websites is in English or has an English version. The International Chinese Statistical Association and International Indian Statistical Association co-sponsor the Joint Statistical Meetings and hold their own annual meetings. ICSA's flagship journal is *Statistica Sinica* (*www3.stat.sinica.edu.tw/statistica*), and while IISA's flagship journal for many years was *Statistical Methodology* (*journals.elsevier.com/statistical-methodology*), the organization is in the process of developing a new journal and publishes an edited book series (*springer.com/series/16210*).

Finally, the Caucus for Women in Statistics (*cwstat.org*) deserves to be mentioned here, as the organization has recently developed a more international focus. Founded in 1971 to address discrimination against women in the statistics field, the organization was instrumental in the establishment of the ASA Committee on Women in Statistics in the same year. The CWS provides multiple benefits to members, including access to webinars, mentoring opportunities, access to travel awards, career resources, and a network of committed women and men who will support your career goals.

Regional International Organizations

Several regions of the world have inter-country organizations that allow groups of countries to pool resources. There are multiple professional organizations for statisticians in Europe that are Europe-wide. For example, the International Society for Clinical Biostatistics (*www.iscb.info*) runs conferences annually in different countries within the European Union. Other Europe-based organizations include Statisticians in the Pharmaceutical Industry (*psiweb.org*) and the Statistical Modelling Society (*statmod.org*).

There is a regional organization for Africa called the African Statistical Association (*afsa-assoc.org*); this organization had gone defunct but was recently revitalized through the efforts of the Ethiopian Statistical Organization. A recent development in this geographic area was the founding of the West African Young Statisticians Association (*waysas.org*); this organization is also based in Nigeria but provides mentoring and training to statisticians throughout western Africa.

Summary

This is a small taste of what is out there to explore in the worldwide statistical community.

If you are already planning to travel to a different region of the world, the ASA Committee on International Relations in Statistics encourages you to consider attending a local conference or contacting the local statistical organization to learn where your foreign colleagues are working and what they are working on. The Committee on International Relations in Statistics will be unveiling a list of national statistics organizations from around the world shortly. In the meantime, if you are traveling and want to be put into contact with a local statistician, contact Jana Asher at *Jana.Asher@SRU.Edu.*

Even if you are not planning to travel anytime soon to a different region of the world, the CIR invites you to assist us in welcoming future Educational Ambassadors who attend the Joint Statistical Meetings. To start the connection, Educational Ambassadors will be encouraged to directly inform the ASA community about the statistical work being done within their own country through an article in *Amstat News* prior to their attendance at the Joint Statistical Meetings. So, look for information about the EAP in future editions of *Amstat News* and come meet us and our EAs at the Joint Statistical Meetings in Philadelphia next year. ■

STAT*tr@k*

Don't Just Cook Rice

Iyue Sung is vice president of enterprise analytics at Press Ganey, a health care data, consulting, and technology company. He manages a team of data scientists who uncover patterns related to patient experience, workforce engagement, nursing quality, and clinical quality. Iyue's prior experience includes electronic health records company athenahealth and Oliver Wyman, a strategy consulting firm. He holds a PhD in statistics from The Ohio State University and a BA in mathematics and philosophy from Boston University. You can reach him by email (*iyue.sung@pressganey.com*) or Twitter (@**iyuesung**).

In Chinese, the literal translation for cooking, "*zhǔ fàn*," is "cook rice." What does this have to do with data science? It's a useful metaphor for working as an applied statistician (i.e., data scientist). To explain, let's take the cooking analogy further and compare ourselves to chefs.

A chef uses both technical skills (e.g., knife skills, cooking technique) and subject knowledge (the chemistry and nuance of how ingredients interplay) to develop and cook a dish. Furthermore, they don't think about just the individual dish, but the whole meal. You go to a restaurant not to eat, but to experience.

Similarly, a data scientist uses both technical skills (programming to create data visualizations and build models) and subject expertise (the math behind statistical methods) to turn data into knowledge. But your job isn't to just build a model or create a cool data visualization. It's to help someone make data-driven decisions. The analysis is one component of the whole. It provides supporting evidence for the larger objective of understanding the client's problem and providing practical solutions. Put another way, don't be the colleague who responds to a request with a table of numbers or data chart. First ask what problem your colleague is trying to solve.

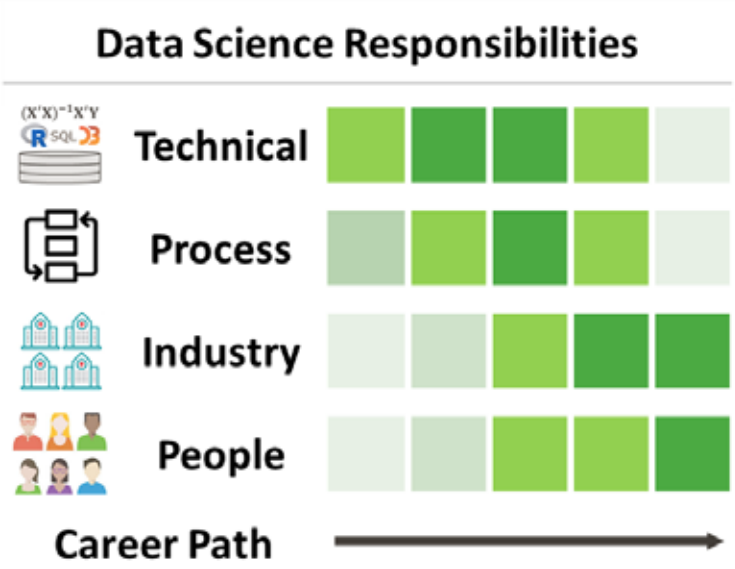
What does it mean to solve a problem? I'll use my current experience to explain. My company collects—for our clients—data that reflects how well health care is delivered in hospitals, medical offices, etc. We measure aspects such as patient experience (perception of different facets of their stay), employee engagement (perception of a hospital's culture, processes, and quality), and clinical outcomes (e.g., infection rates, readmission rates). Clients access this data and related analytics through a web application built by our development team.

The obvious purpose of this information is to improve performance (e.g., reduce infection rates or decrease nurse turnover). And one of the data science team's function is to help our clients improve their performance, beyond what they can do with the application. A common problem might be, "I need to improve the patient-clinician relationship. What components of care delivery impede that relationship?"

Health care is obviously complicated, so there are many aspects involved with answering this question. One needs to understand how a hospital functions, how clients make decisions (they want good, not perfect, solutions), how data is structured in the databases, statistics, programming, and process. The last two are important because we try to scale all the work we do (i.e., develop a process in which we can answer similar questions—for all clients—without re-inventing the wheel). The chef wants a kitchen running like an efficient assembly line to turn out quality meals consistently while accommodating special requests.

Putting together the parts above requires collaboration with a range of people—clients, client liaisons, health care experts, and database architects (to understand the database's structure). You may also need to consult your data science colleague who wrote an R (or Python) package that can be used for your problem. In other words, a project like this requires taking a broad perspective of what it means to be a data scientist.

To understand this perspective and how our team solves



Art by Iyue Sung

these problems, I find it helpful to group our responsibilities into the following four categories:

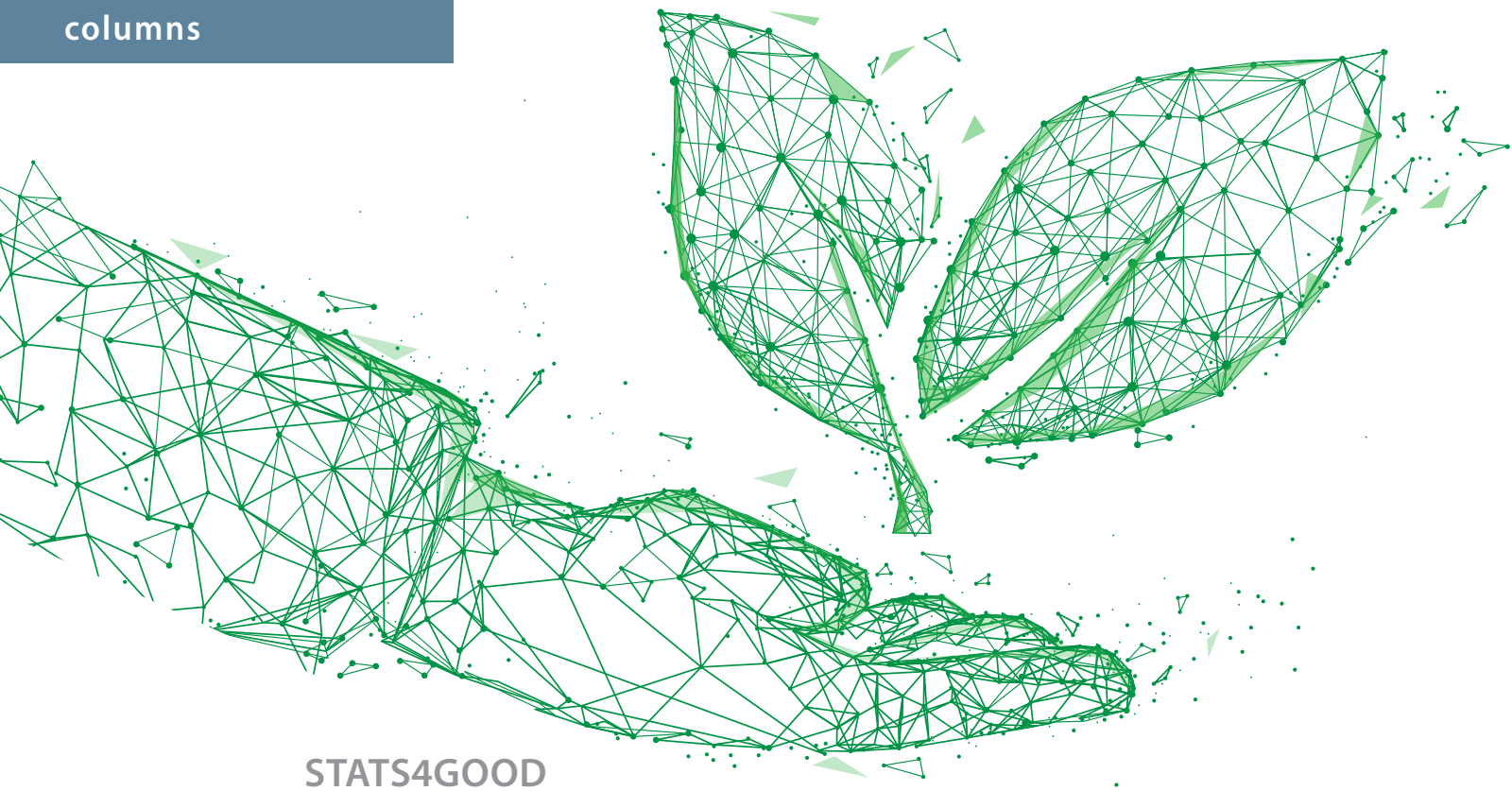
- Technical: Programming and statistical analysis tasks
- Process: Organized systems to get things done
- Industry: Understanding the big picture of what you're doing
- People: Interpersonal skills to get things done

Within each category, a data scientist's expertise and responsibility grow—or shrink—as their career progresses (represented in much of the day producing analytic work and less time interacting with colleagues outside the team (but you should certainly ask). In contrast, this ratio flips for group leaders. They spend less time on technical matters and more on nontechnical tasks to find more "business" for the team, which, consequently, provides them more opportunities to grow.

Going back to the food analogy, think of the data science team as the restaurant staff. A restaurant requires infrastructure, processes, and a range of positions to run effectively. Together, the chef, manager, staff enable all patrons to enjoy the experience consistently.

Your data science team should have the same components: infrastructure (e.g., database and software like R); processes (e.g., your own R packages and a version control system); and a wide range of expertise (programming, data engineering, statistics, industry knowledge). You cannot be an expert at everything, but the team can. If your team is well run, you can focus on your project, which is the "meal" of analysis, presentation, and decision-making. Through this collaborative experience, you and your colleagues will learn from each other.

What I've described isn't original and can be applied to most fields. But given you're an applied statistician—someone who savors discovery and professional growth—you'll surely find joy in thinking more broadly about what it means to "do data science." Once you've mastered cooking just rice (risotto ain't easy), there is much to learn about the many ways it can complete a meal and, ultimately, the entire process of providing a consistent dining experience. Enjoy the experience! ■



STATS4GOOD

Statistics at the Tipping Point:

Data for Good in Environmental Advocacy

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

Environmental dangers are often described in terms of tipping points—a maximum greenhouse gas level, the total human population our planet can support, or the increase in temperature triggering a large rise in sea levels. As much as we hear about tipping points for environmental disasters, the concept itself is benign: a mathematical threshold in a small value that, when crossed, leads to a large change in something else.

Tipping points can also be for good things, like the number of trees saved and planted for a sustainable oxygen supply or the number of statisticians participating in a hackathon to form a nexus of cross-pollinating creative ideas for a better world.

Examples of statistics at the tipping point are all around us, and all of us can participate in making a difference for good. Here are some examples.

Hackathon Focuses on Climate Change

The C40 Climate Leadership Group (*www.c40.org*) is a network of major cities around the world working together to fight climate change. C40 brings together mayors, city departments, business executives, and thought leaders around a mission to "collaborate effectively; share knowledge; and drive meaningful, measurable, and sustainable action on climate change." Ninety-four cities with a combined population of more than 700 million people participate in the network. A particular focus of C40 is practical, substantive, and effective implementation of the 2016 Paris Agreement on climate change.

Last year, C40 partnered with Qlik and the city of Boston, a C40 member, to sponsor a hackathon. Boston supplied data energy use in buildings across the city, which accounts for almost three-fourths of greenhouse gas emissions in Boston. Teams participating in the hackathon developed innovative solutions to help understand, measure, and limit greenhouse gas sources. Many of these creative data science applications can be applied to other cities.

The C40 hackathon is a great example of an event using statistical science to fight climate change, showing many best practices needed to host a high-quality event that makes the most impact: a core group or local volunteers collaborated with a larger organization championing the cause they want to promote. A small core group of organizers developed careful plans and carried the project through. A trusted organization provided data that can be easily transferred to the laptops of hackathon participants. A centrally located site with parking available nearby facilitated participation, and

social media was used to promote the event. Altogether, the C40 hackathon was both a great meeting of minds inspiring creative solutions and a roadmap for future events.

Protecting Endangered Species with Machine Learning

Another area in which Data for Good is making a difference in our natural world is animal conservation. Monitoring the movement of animals provides critical data for conservations of threatened and endangered species. However, the devices used for tracking can be expensive, difficult to implement, and short lived. They can also present a risk of interfering with animal behavior, possibly altering the very qualities researchers want to measure.

The conservation group WildTrack (*https://wildtrack.org*) has developed a system to identify individuals from several species of animals from footprints. Photographs of the footprints are digitized, and a machine learning algorithm identifies the animal that made it with 90 percent accuracy.

These algorithms are being developed by more than a dozen university students around the world. To date, there are algorithms for 13 species.

JMP, from the SAS Institute, supports the project and provides its data visualization software. The result of this collaboration between an NGO, universities, and industry is an inexpensive, noninvasive, and effective method of counting and monitoring threatened and endangered animals.

Identifying Climate Change Vulnerabilities in the Third World

Whether due to deforestation for farmland, pollution, overpopulation, or other mechanisms, harmful practices in poor countries are often contributors to climate change. Helping to meet this need, the Global Facility for Disaster Reduction and Recovery (GFDRR, *www.gfdrr.org/en*) collaborated with Data for Good leader DataKind.

The GFDRR is a World Bank agency providing funding for projects addressing the risk of disasters around the world. A UK-based DataKind team of volunteer data scientists developed a machine learning algorithm to analyze satellite images, identifying buildings and their type and use (*www.elsevier.com/connect/new-in-disaster-science-using-machine-learning-and-maps-to-see-whos-vulnerable*).

This information can be used following a natural disaster to identify population centers, critical infrastructure, and surviving facilities to help aid agencies respond more quickly and effectively. This analysis makes the countries using them more resilient to natural disasters.

More projects are in the works, connecting volunteer statisticians and data scientists to address UN sustainable development goals.

Data for Good opportunities to help preserve and protect the world around us are as varied as the concerns that need to be addressed. When we participate in Data for Good, each and every one of us has the power to become a tipping point—a point of leverage to bring about beneficial change and create data-driven sustainable practices for better communities and a healthier world. ■

Getting Involved

In Data for Good opportunities this month, check out the student awards at *http://asa.stat.uconn.edu*. Sponsored by the Statistical Computing and Statistical Graphics sections, two student awards will be presented at JSM in Philadelphia.

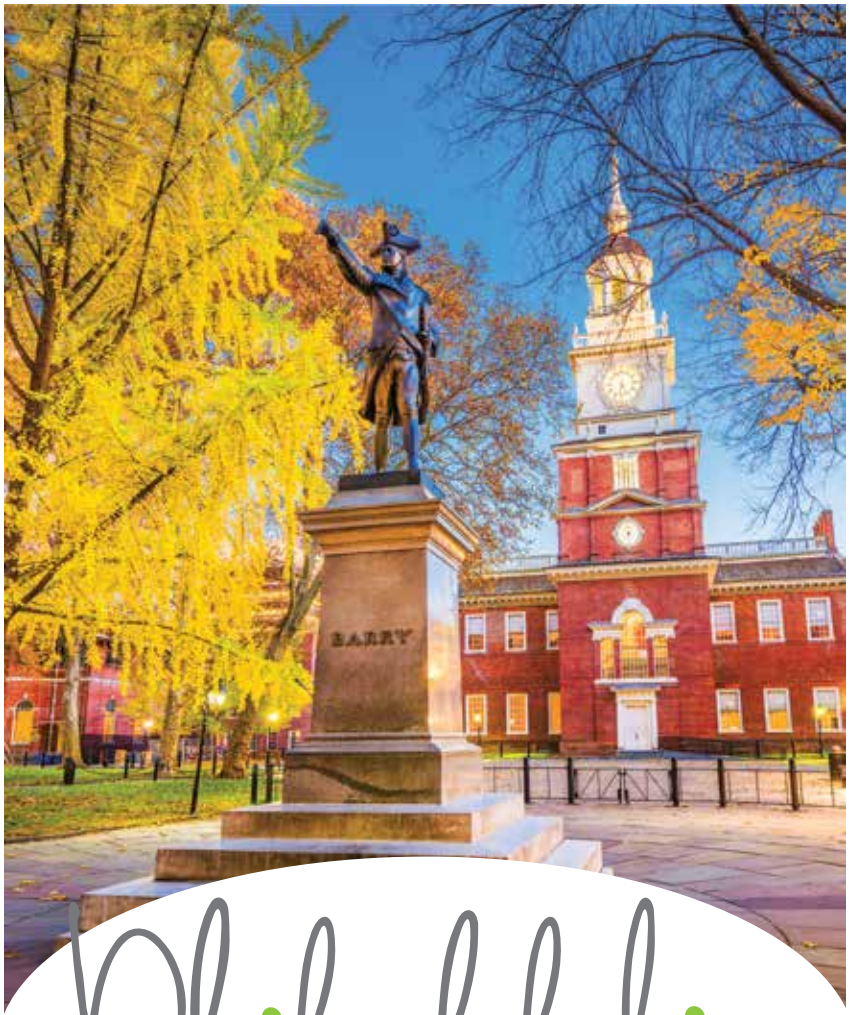
The John M. Chambers Statistical Software Award honors software written by, or in collaboration with, an undergraduate or graduate student. The Student Paper Competition recognizes a paper in the area of statistical computing and statistical graphics.

Neither are specific to Data for Good, but it's a great opportunity to show off your work while making a positive difference with statistics. I hope the D4G community will be well represented.

The submission deadline for both awards is December 15.

Also of interest to Data for Good advocates and activists is the new ASA Leader HUB (*https://community.amstat.org/asaleaderhub/home*). It's a central location for resources leaders in ASA chapters, sections, and interest groups can use. Of particular interest is the ASA Chapter Stimulus program, supporting activities that develop chapter interest and membership—and Data for Good projects are a great way to do it.

Be in the know!



Philadelphia
JSM 2020
Philadelphia, Pennsylvania, August 1-6, 2020

ww2.amstat.org/meetings/jsm/2020

KEY DATES FOR PARTICIPANTS

July 18, 2019 – September 5, 2019
Invited Session Proposal Submission

September 30, 2019
Continuing Education Course Proposal Deadline

November 12, 2019 – December 10, 2019
Topic-Contributed Session Proposal Submission

December 3, 2019 – February 4, 2020
General Abstract Submission
(all except invited papers and panels)

January 15, 2020
Computer Technology Workshop
Proposal Deadline

January 22, 2020 – April 2, 2020
Meeting and Event Request Submission

February 3, 2020 – April 15, 2020
Late-Breaking Session Proposal Deadline

May 15, 2020
Draft Manuscript Deadline

KEY DATES FOR ATTENDEES

April 30, 2020
Registration and Housing Open
(11:00 a.m. ET)

June 2, 2020
Early Registration Deadline

June 30, 2020
Regular Registration Deadline

June 30, 2020
Housing Deadline

Contest to Provide Student Winner with Travel Award

The Sixth International Conference on Establishment Statistics is sponsoring a student contest with awards given in two tracks: nonresponse treatment and analysis/visualization of economic statistical data. The goal of the contest is to encourage students to create interesting and challenging applications that test their technical skill and creativity.

Winners will present their research at ICES VI and receive $1,500 to be used toward registration and/or travel expenses to attend the conference.

Reports are due by February 15, 2020. Winners will be notified on March 31, 2020.

Eligibility requirements and submission rules are on the ICES VI website at *ww2.amstat.org/meetings/ices/2020/studentcontest.cfm*. ■

PARTICIPATE

December 3, 2019
Contributed Abstract Submission Closes

December 12, 2019
Software Demonstration Proposal Submission Closes

February 11, 2020
Early Registration and Housing Opens

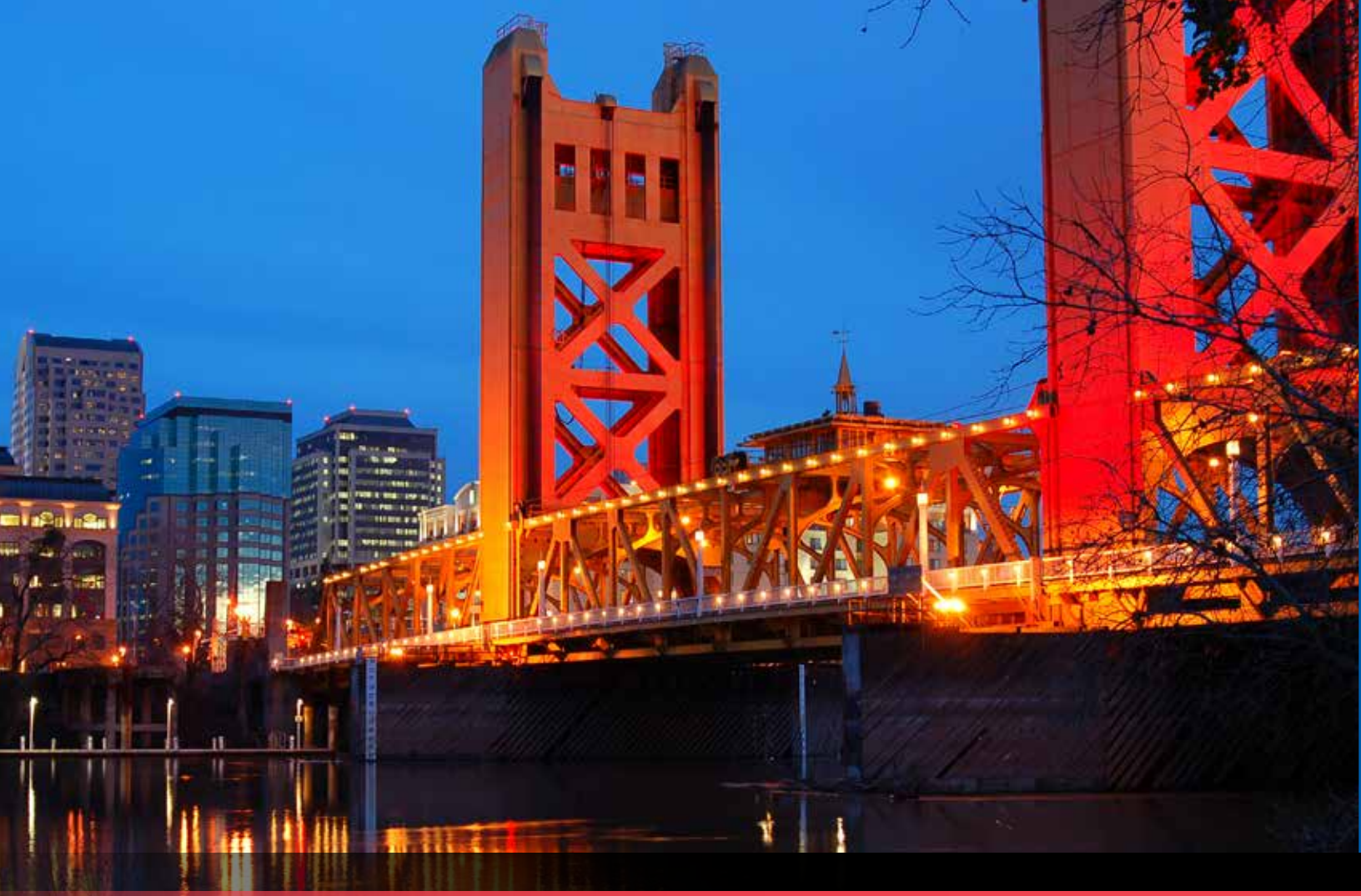
April 15, 2020
Speaker Registration Deadline

May 7, 2020
Early Registration Deadline

May 8, 2020
Regular Registration (increased fees apply)

May 22, 2020
Housing Deadline, 5:00 p.m. ET

June 15–18, 2020
ICES VI in New Orleans, LA



CSP 2020

Heading to West Coast in February

The Conference on Statistical Practice (CSP) will take place in Sacramento, California, February 20–22 and provide opportunities for attendees to further their career development and strengthen relationships in the statistical community.

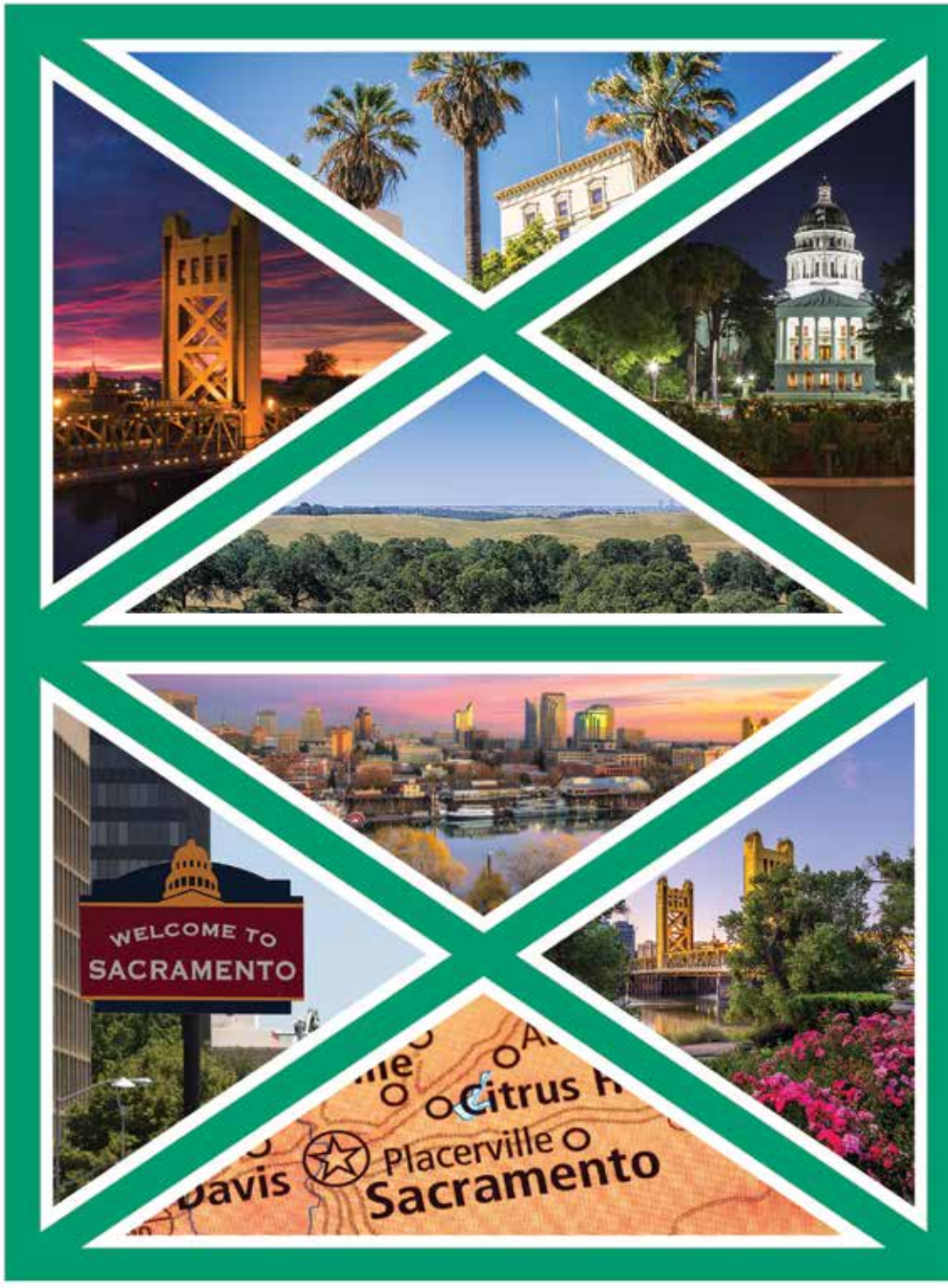
With its focus on the application of statistics to solve real-world problems, CSP brings together hundreds of statisticians, data analysts, researchers, and scientists each year. Sessions focus on the following four key themes, which are relevant to those working in the application of statistics and data science in their daily work:

- Theme 1: Communication, Collaboration, and Career Development
- Theme 2: Data Modeling and Analysis
- Theme 3: Data Science and Big Data
- Theme 4: Software, Programming, and Data Visualization

This year's CSP will again host a free virtual Career Service. This service provides a platform that connects attendees and statistical employers. If you are seeking to start or further your career in statistics or data science, post your profile and résumé, search positions, and contact employers of interest. Employers will arrange interviews directly. Learn more on the CSP website at *ww2.amstat.org/meetings/csp/2020/careerservice.cfm.*

The close-knit atmosphere of CSP is ideal for fostering a comfortable learning and networking environment. The goal of the conference is to provide participants with opportunities to learn new statistical methodologies and best practices in statistical analysis, design, consulting, and statistical programming.

Registration is open at *ww2.amstat.org/csp.* Questions may be sent to *meetings@amstat.org.* ■



Drew Baughman, Committee on International Relations in Statistics chair; Vikash R. Satyal, 2019 Educational Ambassador from Nepal; Ron Wasserstein, ASA Executive Director; and Carlos A. Diaz-Tufinio, 2019 Educational Ambassador from Mexico meet during the ASA Board of Directors lunch at JSM 2019.

2019 Educational Ambassadors from Nepal, Mexico Attend JSM

The 2019 ASA Educational Ambassadors, Vikash R. Satyal of Tribhuvan University in Kathmandu, Nepal, and Carlos A. Diaz-Tufinio of Tecnologico De Monterrey, Mexico City in Mexico City, Mexico, attended the Joint Statistical Meetings in Denver, Colorado, to participate in continuing education courses.

The ASA board expanded funding for the program to select two ambassadors in 2019.

The Educational Ambassador Program is an ASA outreach effort launched by the late Martha Aliaga and the Committee on International Relations in Statistics to foster international collaboration and enhance statistics education worldwide. The program subsidizes two ambassadors from developing countries to attend JSM and take CE courses. It also provides a one-year ASA membership.

Candidates are required to have a PhD in statistics and an interest in teaching and be open to study in new areas of research. After attending CE courses in emerging areas of research, the educational ambassadors return to their respective countries and teach the subject matter covered in the CE course(s) within the next year to at least 10 students.

Satyal commented, "To be selected as EA and participate in the JSM 2019 was a turning point of my life. Learning new technologies like data science, categorical data analysis, and R at JSM will certainly enhance my teaching that I will be giving to my students at Tribhuvan University of Nepal. I appreciate all who initiated such excellent knowledge bridging idea and those who are managing the program until now. I additionally wish that EAs be given further refresher training/learning opportunities. As a professor of statistics and chairman of Nepal Statistical Association, I wish a successful continuation of the EA program."

While at JSM, Satyal and Diaz-Tufinio participated in several continuing education courses, including the following:

- Welcome to the Tidyverse: Reproducible Data Science with R
- Categorical Data Analysis
- An Introduction to the Joint Modeling of Longitudinal and Survival Data, with Applications in R
- Bayesian Thinking: Fundamentals, Computation, and Multilevel Modeling
- Statistical Network Analysis and Applications in Biology
- Analysis of Clinical Trials: Theory and Applications
- Design and Analysis of Experiments That Incorporate Simulator Platforms

Drew Baughman, chair of the Committee on International Relations in Statistics, commented, "The ASA Educational Ambassador program has been a great success in growing the ASA community of statisticians across the world and making links to further statistical capacity building in countries outside of the US."

Since the program launch in 2005, the Committee on International Relations in Statistics has chosen educational ambassadors from Argentina, Ethiopia, Vietnam, Morocco, Armenia, Costa Rica, Botswana, Colombia, Bangladesh, Nigeria, Namibia, Pakistan, Thailand, Nepal, and Mexico. These educational ambassadors have taught the material learned in JSM short courses in numerous academic courses and workshops carried out in their home countries.

"Attending to the JSM was a wonderful experience; the interaction with other colleagues and statisticians around the globe in similar study fields is enriching and stimulating from the scientific perspective. Moreover, the sessions and CE short courses are really high leveled and they contributed with new and fresh ideas for my teaching labor and statistical practice in Mexico," said Diaz-Tufinio. He continued, "With the experiences acquired in the JSM, my upcoming plans as an ASA Educational Ambassador in Mexico are to diffuse the statistical knowledge not only to my undergrad statistics students, but also I will work to update other professors in related fields. Even more, further plans are to impact outside academia, reaching industry and regulatory sectors as well, with specialized talks and lectures to executives and professionals related to statistics in the field of clinical trials. All this will spread the word of ASA and will help the consolidation of the statistical advancement in my field within my country."

The committee is seeking nominations for the 2020 Educational Ambassadors from Ukraine, Democratic Republic of Congo, Uganda, Kazakhstan, Turkmenistan, and/or Central African Republic. More information is available at *www.amstat.org/ASA/Education/Educational-Ambassador.aspx*. ■

Aliaga

A fund in memory of Martha Aliaga, former ASA director of education who created the Educational Ambassador Program with the Committee on International Relations in Statistics, helps support this program. Martha was passionate about statistical education and international outreach. We remember and honor her extensive contributions to enhance statistics education globally with this program. Read more about Martha, her life, and her legacy at *https://magazine.amstat.org/blog/2017/09/01/marthaaliaga*.

What's Going On in This Graph? Enters Third Year

The ASA celebrates its third year of partnership with *The New York Times* Learning Network on the popular "What's Going On in This Graph?" feature, a program that helps teachers lead class discussions about graphs appearing in *The New York Times*.

The discussions engage students in grades 7–12 in activities and questions designed to improve their understanding and critical interpretation of visual displays of information in real life.

> "One of the best features of WGOITG is the "snappy headline" question. My students are so driven to get a shout-out in the **@NYTimes**!"
>
> Mark Kingsbury • **@mhkingsbury**
> *Sept. 18, 2019*

Launched in the fall of 2017 as a monthly feature, "What's Going On in This Graph" (WGOITG) expanded to providing weekly content last year.

Throughout the 2019–2020 academic year, a new graph and related content will be released every Thursday afternoon. Students and teachers can participate in a live, online discussion about the week's WGOITG on Wednesdays between 9 a.m. and 2 p.m. ET. Each week, the previous WGOITG will be updated with a "reveal" that shares answers to questions posed in the activities, highlights from the discussion, related statistical concepts, and helpful vocabulary.

Sharon Hessney, WGOITG leader at the ASA, points out that WGOITG imparts many benefits to teachers. It is provided completely free of charge and designed to be accessible to students ages 12 and up, regardless of their mathematical background. The content and activities are well suited for use in not only statistics and mathematics classrooms, but science and humanities, as well. And the time requirements are flexible, allowing for use as either at-home assignments or in-class discussions.

Archived WGOITGs, indexed by topic and graph type, are freely available online. Teachers can also view a *New York Times* Learning Network webinar—featuring Sharon Hessney and Dan Meyer from Desmos, as well as teachers and students—with pointers for using WGOITG in the classroom.

To stay up to date and share the WGOITG content with your teacher, student, and parent networks, follow #NYTGraphChat on social media. ■

New WGOITG releases scheduled for the 2019–2020 academic year include the following:

- November 6, 13, and 20
- December 4 and 11
- January 8, 15, 22, and 29
- February 5, 12, and 26
- March 4, 11, 18, and 25
- April 1 and 8

Visit the website at *nyti.ms/2VOttzp* to see more and participate in What's Going On in This Graph?

Hal Stern Appointed UCI Vice Provost for Academic Planning

Hal S. Stern, longtime member of the ASA, has been appointed vice provost for academic planning at the University of California, Irvine (UCI).

Since joining UCI as founding chair of the statistics department in 2002, Stern has held a range of academic and administrative leadership roles. He served for eight years as chair of statistics, and then more than six years as the Ted and Janice Smith Family Foundation Dean of the Donald Bren School of Information and Computer Sciences. He is currently a chancellor's professor of statistics.

Formerly at Iowa State University and Harvard University, Stern's research interests include Bayesian methods, model assessment techniques, causal inference, and collaborative projects in the life sciences and social sciences. He is co-director of the Center for Statistics and Applications in Forensic Evidence, funded by the National Institute of Standards and Technology, and part of the leadership team for the Conte Center at UCI, funded by the National Institutes of Health.

Stern is a fellow of the American Association for the Advancement of Science, the ASA, and the Institute of Mathematical Statistics. In addition, he has served on several expert committees for the National Academies of Sciences, Engineering, and Medicine.

Stern

Read more about Stern and his new appointment on the UCW website at *www.stat.uci.edu/hal-stern-appointed-vice-provost-for-academic-planning*. ■

The Department of Statistics at Texas A&M University
Invites Nominations for the
Emanuel & Carol Parzen Prize for Statistical Innovation

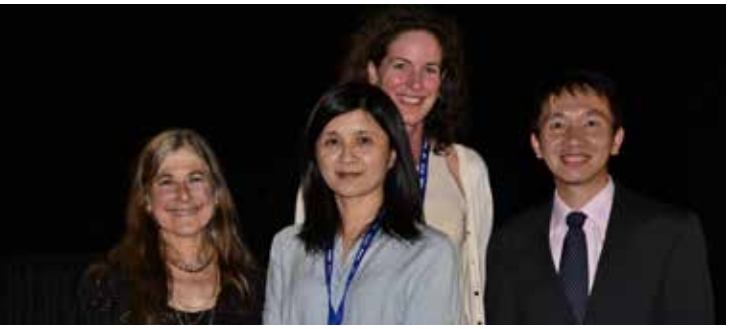
TEXAS A&M UNIVERSITY
Statistics

To promote the dissemination of statistical innovation, the Emanuel and Carol Parzen Prize for Statistical Innovation is awarded in even numbered years to a North American statistician whose outstanding research contributions include innovations that have had impact on practice and whose Ph.D. degree is at least 25 years old. The Parzen Prize is awarded by the Department of Statistics at Texas A&M University and is selected by the members of the Parzen Prize Committee (consisting of three internal faculty members and two external faculty members). The prize consists of an honorarium of $1000 and travel to College Station to present a lecture at the ceremony.

Nominations for the 2020 Parzen Prize should include a letter describing the nominee's outstanding contributions to high impact innovative research in statistics, a current curriculum vita, and two supporting letters. Nominations should be submitted by February 29, 2020 to the Chair of the 2020 Parzen Prize Committee:

Professor Thomas Wehrly
Department of Statistics
Texas A&M University
3143 TAMU
College Station, Texas 77843-3143.

For more information on the Parzen Prize, please visit our website at www.stat.tamu.edu/events/parzenprize/index.html.



LEFT: Winners of the SPAIG Award: Ying Huang, Zoe Moodie, and Ming Zhu. Not pictured are Brenda Price, Carlos DiazGranados, Youyi Fong, Peter Gilbert, Michal Juraska, Edith Langevin, Tifany Machabert, Stephen Savarino, and Saranya Sridhar.
RIGHT: Winners of the SPAIG Award: Benjamin Baumer, Andrea Foulkes, Nicholas Horton, and Ethan Meyers. Not pictured are Krista Gile, David Jensen, Andrew McCallum, Sears Merritt, Nick Reich, Gareth Ross, and Amy Wagaman.

SPAIG Award Goes to Two

Ying Ding, University of Pittsburgh; Willis Jensen, WL Gore and Associates; Julia Lee, Northwestern University; and Fanni Natanegara, Eli Lilly and Company

Established in 2002, the Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Award highlights outstanding partnerships among academe, industry, and government organizations, as well as promotes new partnerships among these organizations. This award is distinct from other ASA awards in that it recognizes outstanding collaborations between organizations, while recognizing key individual contributors.

Two SPAIG awards were presented during the 2019 Joint Statistical Meetings (JSM) in Denver, Colorado. Both winners have equally demonstrated impactful collaboration across two or more sectors.

Fred Hutchinson Cancer Research Center and Sanofi Pasteur began their partnership in 2013 when Sanofi Pasteur was testing a candidate vaccine in randomized, placebo-controlled efficacy trials. An objective of these efficacy trials was to assess neutralizing antibody markers as predictors of dengue disease, surrogate endpoints for dengue disease, and modifiers of vaccine efficacy against dengue disease, accounting for the four dengue serotypes and genetic diversity of dengue.

Fred Hutchinson statistics group specializes in statistical methods for this objective, so a partnership was launched to tackle the objective with a short-term goal that Fred Hutch would provide statistical consultation to Sanofi Pasteur on issues pertaining to design optimization for their randomized, placebo-controlled phase 3 trials of the CYD-TDV dengue vaccine and establish a framework for a correlate of protection analysis to ensure Sanofi Pasteur developed an optimal blood sampling strategy for their dengue vaccine efficacy trials. The long-term goal was for Fred Hutch to provide and apply analytical methods to Sanofi Pasteur's neutralizing antibody assay data, provide viral sequence analysis, provide "sieving analysis," and generate methodology for meta-analysis for the dengue vaccine efficacy trials.

Peter Gilbert from Fred Hutchinson said the major benefits from the collaboration are it "facilitated a more robust set of statistical analyses of critical questions in dengue vaccination, helping solidify conclusions about safety and efficacy of Sanofi Pasteur's vaccine that were broadly discussed by advisory boards and regulatory bodies, and affected global recommendations for appropriate use of the licensed vaccine." Gilbert continued, "The partnership improved statistical methods development at the Fred Hutchinson and University of Washington PhD biostatistics students in training by ensuring all methodological decisions were grounded in the ongoing clinical and laboratory science and realities of the clinical trials. The partnership also facilitated technology transfer of statistical methods and R packages to Sanofi Pasteur that may be useful for other vaccine trials."

The most rewarding aspects of the collaboration according to Gilbert are "building trusting relationships with mutual respect around the integrity of the science and sticking with the collaboration through some intense periods and ups and downs."

SPAIG's mission is to promote initiatives that foster statistical partnerships or collaborations. Gilbert's advice to individuals and organizations looking to be more collaborative is to have a "handful of in-person meetings visiting each other's institutions and giving seminars and having broad discussion, as well as having social time to get to know each other." He also added, "It helps to have a disposition of being open and flexible, with enough humility about

one's own preferred statistical approaches that multiple approaches can be applied, with their different assumptions and pros/cons described and discussed in a non-defensive manner."

The second award went to Smith College, Mount Holyoke College, Amherst College, Hampshire College, University of Massachusetts-Amherst, and MassMutual Financial Group. They represent a public-private partnership that has promoted the rapid growth of the statistics and data science community in Western Massachusetts in the last five years. Highlights of their mutual beneficial partnership include the following:

- Ten-year, $15 million grant from the MassMutual Foundation to the UMass Center for Data Science that has been used to hire new faculty and launch a new graduate concentration in data science
- Four-year, $2 million women in data science grant from MassMutual to Mt. Holyoke and Smith colleges used to hire new temporary faculty and launch majors in statistics and data science
- MassMutual Data Science Development Program (DSDP), an innovative three-year work-study training program that recruits recent Five College graduates, hires them as junior data scientists, and enrolls them in graduate programs at UMass
- Sponsorship of the ASA Five College DataFest, which is one of the largest in the country, by MassMutual

This collaboration began when Andrew Bray (then a Five College post-doc) approached Gareth Ross of MassMutual seeking sponsorship of the inaugural Five College DataFest. Ross and Merritt Sears of MassMutual launched the Data Science Development Program in the summer of 2014 based on a proposal written by Bray and Ben Baumer. The first cohort included seven recent undergraduates from the Five Colleges.

Sears noted that "seeing both organizations grow their data science capabilities in such meaningful and impactful ways has been a tremendously rewarding experience." The major benefits that have come from this collaboration are "the creation of a strong talent pipeline and development program curriculum taught by academic experts," according to Sears. For those seeking collaborations, Sears also noted "it is important to identify shared goals and collaborate with a partner that can help achieve those goals, using skills and capabilities that are additive to your own."

Baumer, of Smith College, said, "The funding of visiting assistant professor positions at Smith and Mount Holyoke by MassMutual have been hugely important to helping both schools develop majors in (statistics and) data science." Baumer also noted that "Smith has sent several of our graduates through the MassMutual Data Science Development Program, and it has been very gratifying to see their success in that competitive industry while they are simultaneously pursuing a graduate degree."

For more information about the SPAIG committee and award, visit the SPAIG website at *www.amstat.org/ASA/Your-Career/Awards/Statistical-Partnerships-Among-Academe-Industry-and-Government-Award.aspx.* ■

Fred Hutchinson Key Contributors

Yunda Huang (nominator), Fred Hutchinson Cancer Research Center

Peter Gilbert, Fred Hutchinson Cancer Research Center

Ming Zhu, Sanofi Pasteur

Brenda Price, Fred Hutchinson Cancer Research Center

Carlos DiazGranados, Sanofi Pasteur

Youyi Fong, Fred Hutchinson Cancer Research Center

Ying Huang, Fred Hutchinson Cancer Research Center

Michal Juraska, Fred Hutchinson Cancer Research Center

Edith Langevin, Sanofi Pasteur

Tifany Machabert, Sanofi Pasteur

Zoe Moodie, Fred Hutchinson Cancer Research Center

Stephen Savarino, Sanofi Pasteur

Saranya Sridhar, Sanofi Pasteur

Smith College Key Contributors

Benjamin Baumer (nominator), Smith College

Andrea Foulkes, Mount Holyoke College

Amy Wagaman, Amherst College

Ethan Meyers, Hampshire College

Nicholas Reich, University of Massachusetts-Amherst

Krista Gile, University of Massachusetts-Amherst

Brant Cheikes, University of Massachusetts-Amherst

Gareth Ross, MassMutual Financial Group

Sears Merritt, MassMutual Financial Group

Nominations Sought for Breiman Award

The Breiman Award Committee of the Statistical Learning and Data Science Section, chaired by David Madigan, invites nominations for the senior and junior awards in honor of Leo Breiman (1928–2005).

Breiman's work helped bridge the gap between statistics and computer science, particularly in the field of machine learning. His most important contributions were his work on classification and regression trees, ensemble estimators, and random forests.

The Breiman Award Committee selects the Breiman senior scholar and junior scholar based on outstanding theoretical or methodological contributions to machine learning and/or computational statistics—contributions that have made a substantial, sustained impact on the subject and on practical applications. Nominations are accepted in odd-numbered years.

The award includes a monetary prize, a plaque, and an invited lecture at JSM two years later.

The Breiman junior scholar must have earned a doctoral degree no earlier than 2007 and been an SLDS section member for at least two years as of December 15, 2019.

Nominations are due by December 15, 2019. A nomination packet—including a nominating letter, up to three supporting letters (the nominator may write one of the supporting letters), and curriculum vitae of the nominee—should be sent to Madigan at *david.madigan@columbia.edu*. ■

Student Paper Competitions

The winners of student paper competitions earn travel awards to ASA-sponsored conferences. The following general policies and procedures apply to all ASA section competitions (see individual sections for further instructions):

- Sections must receive all materials by December 15. Some sections have earlier deadlines, so check each section's website for dates.
- Winners will be notified by January 15.
- JSM best paper competition winners must submit abstracts and register for JSM through the official JSM abstract submission system by the deadline.
- Students may submit papers to no more than two sections and may accept only one section's award. Students must inform both sections applied to when he or she wins and accepts an award, thereby removing themselves from the award competition for the second section.
- Students planning to participate in section competitions must adhere to the eligibility, paper format, submission process, and other requirements of the sections to which they are applying.

Visit the ASA website for a list of sections offering the awards and detailed instructions and deadlines: *www.amstat.org/ASA/Your-Career/Student-Paper-Competitions.aspx*. ■

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*.

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

Program	Deadline	Nominations	Questions
John J. Bartko Scholarship Award	December 2, 2019	awards@amstat.org	Donna LaLonde donnal@amstat.org
Breiman Award	December 15, 2019	David Madigan, david.madigan@columbia.edu	
COPSS Fisher Award and Lectureship, Elizabeth L. Scott Award, and Presidents' Award	December 15, 2019	community.amstat.org/copss/home	
Gottfried E. Noether Awards	January 15, 2020	awards@amstat.org	
Karl E. Peace Award	February 1, 2020	awards@amstat.org	Joseph E. Cavanaugh joe-cavanaugh@uiowa.edu
W. J. Dixon Award for Excellence in Statistical Consulting	February 15, 2020	awards@amstat.org	
Harry V. Roberts Statistical Advocate of the Year Award	February 15, 2019	awards@amstat.org	
Waller Awards	February 15, 2020	awards@amstat.org	
Samuel S. Wilks Memorial Award	February 15, 2020	awards@amstat.org	
W. J. Youden Award in Interlaboratory Testing	February 15, 2020	awards@amstat.org	
Statistics in Physical Engineering Sciences Award	February 20, 2020	Ming Li, mli@alumni.iastate.edu	
Gertrude M. Cox Scholarship	February 23, 2020	awards@amstat.org	
Edward C. Bryant Scholarship Trust Fund	March 1, 2020	awards@amstat.org	
Causality in Statistics Education Award	March 1, 2020	educinfo@amstat.org	
Excellence in Statistical Reporting Award	March 1, 2020	awards@amstat.org	
ASA Fellows	March 1, 2020	awards@amstat.org	
ASA Mentoring Award	March 1, 2020	awards@amstat.org	Wendy Martinez martinez.wendy@bls.gov
Outstanding Statistical Application Award	March 1, 2020	awards@amstat.org	
Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Award	March 1, 2020	awards@amstat.org	Pamela D. McGovern pam.mcgovern@nass.usda.gov
Biopharmaceutical Section Scholarship Award	March 15, 2020	community.amstat.org/biop/awards/scholarship	
Founders Award	March 15, 2020	awards@amstat.org	Wendy Martinez martinez.wendy@bls.gov
Government Statistics Section Wray Jackson Smith Scholarship	April 1, 2020	awards@amstat.org	Kevin Konty kkonty@health.nyc.gov
Links Lecture Award	May 1, 2020	awards@amstat.org	Barry W. Johnson barry.w.johnson@irs.gov
Health Policy Statistics Section Achievement Awards	September 15, 2020	hpssawards2020@gmail.com	
Lester R. Curtin Award	October 15, 2020	awards@amstat.org	
Deming Lecturer Award	October 15, 2020	awards@amstat.org	
Lingzi Lu Memorial Award	October 15, 2020	awards@amstat.org	
Monroe. G. Sirken Award in Interdisciplinary Survey Methods Research	December 15, 2020	awards@amstat.org	Aaron Maitland amaitland@cdc.gov

sectionnews

Biometrics

Do you know an early-stage investigator who is planning to submit an abstract for the 2020 Joint Statistical Meetings (JSM)? If so, alert them to the ASA Biometrics Section's 2020 JSM early-stage investigator awards.

We will consider papers from two categories: Biometric Methodology and Biometric Practice. Papers in methodology should propose novel statistical methodology addressing a problem relevant to the biological sciences. Applications in Biometric Practice should demonstrate innovative applications of an existing method in a novel context, reexamine statistical practices from a new perspective, or propose innovative and practical data analysis strategies.

Travel awards in the amount of $1,000 will be awarded to the most outstanding papers in each category to help cover conference expenses.

The best overall paper will be awarded the David P. Byar Young Investigator Award. The award commemorates the late David Byar, a biostatistician who made significant contributions to the development and application of statistical methods and was esteemed as an exceptional mentor during his career at the National Cancer Institute. The winner of the Byar award will receive $2,000.

All applicants for the early-stage investigator awards must meet all of the following criteria:

- Have held a doctorate in statistics, biostatistics, or a related quantitative field for three or fewer years as of April 1 of the current year or be currently enrolled as a student in a program in statistics or biostatistics and in active pursuit of a degree.
- Be a current member of the Biometrics Section (applicant may join at the time of submission for a $5 annual membership fee [$3 for students]). Note that membership in the ASA does not automatically confer section membership; ASA members must join individual sections in addition to their generic membership.
- Be first author of the paper. The paper may be unsubmitted, submitted, or under review, but may not have already appeared in a journal either online or in print at the time of the application or have been accepted for publication as of December 5, 2019.
- Be scheduled to present the same paper submitted for the award at the 2020 Joint Statistical Meetings in Philadelphia, Pennsylvania, as either a talk or poster.
- Have submitted the paper to no more than one other ASA section 2020 student or early-stage investigator award competition. In the event of a paper winning two competitions, the author is permitted to accept only one of the two awards.
- Have not been a previous Byar Award or Biometrics Section travel award winner.

Applicants must submit their JSM abstracts to the Biometrics Section, which will organize a series of topic-contributed sessions to highlight the awards winners. Applicants must also complete their application by submitting the following materials:

- A current CV
- A one-page cover letter that summarizes the paper's content and contribution
- One PDF copy of the paper

The paper must be a maximum of 25 double-spaced pages (with maximum of 25 lines per page), including references but not including tables and figures. Papers not within these restrictions will not be considered.

All materials must be submitted electronically on or before December 1, 2019. Questions should be sent to the 2020 Byar Award Chair Sheng Luo at *sheng.luo@duke.edu*.

The 2020 Awards Committee is composed of the 2020 current and past section chairs and chair-elect, as well as additional individuals to be appointed by the section chairs prior to the competition.

For the 2020 competition, the Byar Award and travel award winners will be announced by January 15, 2020. Winners should contact the 2020 Section JSM Program Chair Samrachana Adhikari (*samrachana.adhikari@nyulangone.org*) and submit a topic-contributed abstract for JSM 2020.

More information about this award is available on the section website at *https://community.amstat.org/biometricsbiom.*

Strategic Initiatives Grant

The ASA Biometrics Section provides funding to support projects developing innovative outreach projects focused on enhancing awareness of biostatistics among quantitatively talented US students. We particularly are interested in projects that encourage students to pursue advanced training in biostatistics. The project timeline is typically 1.5–2 years, and the

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Biometrics Section provides support up to $3,000. Award recipients must be ASA members and Biometrics Section members before project initiation.

The Strategic Initiatives Subcommittee chair is Tanya Garcia. Milan Bimali is co-chair.

Details about applying can be found at *https://community.amstat.org/biometricsbiom/jsm2019.*

Feel free to fill out either format. The application should be submitted electronically to Garcia at *tpgarcia@stat.tamu.edu.* ■

Statistics in Defense and National Security

The Section for Statistics in Defense and National Security (SDNS) is soliciting entries for its student researcher paper competition for the 2020 Joint Statistical Meetings.

Each year, the section offers the winning author a certificate and travel award of $1,000 to defray the cost of attending JSM and presenting their work in a session sponsored by SDNS.

This competition is open to all undergraduate students, graduate students, and researchers who are, at most, two years beyond their terminal degree. The author must be a member of SDNS or join the section at the time of submission.

The contribution may be a theoretical development or cover any of the numerous applications related to defense or national security. Papers that have been accepted for publication in a journal are not eligible for the competition.

Entrants should submit the following:

1. A list of authors and contact information (the contestant must be the first author).
2. A double-spaced manuscript in two versions: a regular manuscript with author information and a blinded manuscript without author information or other identifying information (such as references). Both versions should include an abstract.
3. A reference letter from a faculty member familiar with the submitted work stating the status of the applicant and the publication status of the manuscript.

Entries should be sent to Nicholas Clark, chair of the paper award committee, at *nicholas.clark@westpoint.edu*. The email should include the two versions of the completed manuscript as attachments in PDF format. All entries must arrive by December, 15, 2019. Include the words "Best Paper Award" in the subject line of the email.

Manuscripts will be judged on relevance and interest of the subject matter, quality of writing, and, of course, the quality of the research, itself. Winners will be announced by January 15, 2020. ■

Survey Research Methods

The Survey Research Methods Section (SRMS) offers poster awards for the most outstanding poster or speed session presentations. This year, the following six winners were selected:

- **Allshine Chen** (University of Oklahoma Health Sciences Center), "Statistical Disclosure Control with Machine Learning"
- **Rachel Harter** (RTI International), "A Practical Guide to Small Area Estimation, Illustrated Using the Ohio Medicaid Assessment Survey"

- **Christian Léger** (Université de Montréal), "A Smooth Pseudo-Population Bootstrap Approach in Survey Sampling with Applications to Quantile Estimators"
- **Jerry Maples** (US Census Bureau), "Small Area Estimates of the Child Population and Poverty in School Districts Using Dirichlet-Multinomial Models"
- **David McGrath** (US Department of Defense), "Effect of Monetary Incentives on Response Rates and Data Quality in a Survey of the US Military"
- **David Popko** (Bureau of Labor Statistics), "Does Location Matter? A Case Study of the Influence of Geography in Measurement of Gasoline Prices"

Last Call for JSM 2020 Topic-Contributed Session Proposals

JSM 2020 topic-contributed session proposals are due December 10.

Topic-contributed sessions include papers (five total speakers with 20 minutes each, with at least three presenters and no more than two discussants), panels (3–6 panelists providing commentary about a topic), or posters (10–15 participants with posters addressing a common topic).

A topic-contributed session proposal includes a session title, general description of the session, list of participants, and tentative talk titles.

If you are interested in organizing a topic-contributed session, select a session topic and solicit potential speakers. Once you have a sufficient number of committed speakers, you can submit your proposal online from November 12 to December 10.

Student Travel Awards

SRMS is sponsoring student travel awards for JSM 2020. The application deadline is December 16. Download the application at *www.asasrms.org/travelapp_2020.pdf.*

Along with the Government Statistics and Social Statistics sections, SRMS also co-sponsors student paper awards. Winners will present their paper in a special JSM session. The deadline to apply is December 21. For details, visit the SRMS homepage at *https://community.amstat.org/surveyresearchmethodssection/home.* ■

Mental Health Statistics

The Mental Health Statistics Section is sponsoring a student paper competition. Winners will receive $1,000 toward the cost of travel to the Joint Statistical Meetings.

Papers entered into this student paper competition should involve a methodological innovation or novel application of statistical methods to a mental health issue. Current undergraduate or graduate students at any level, as well as those who graduated in 2019 and wish to submit research they conducted as students, are eligible to participate. Participants do not have to be a member of the ASA or Mental Health Statistics Section.

Up to two cash prizes of $1,000 each will be awarded to the highest-rated paper(s). The award will help cover JSM 2020 expenses, so the winner(s) is required to be present at JSM 2020. The winner(s) must submit an abstract on the topic of their winning paper and register for JSM before the deadline through the official JSM abstract submission system (*ww2.amstat.org/meetings/jsm/2020/submissions.cfm*). The award(s) will also be announced at the Mental Health Statistics Section mixer at JSM 2020, so winners should be in attendance for that.

Applications must include the following:

- A cover letter with name, current affiliation, and status (including actual or intended date of graduation), and contact information (i.e., address, telephone, email) of the applicant
- The paper submitted for the competition, including an abstract of up to 1,200 characters
- A letter from the adviser certifying student status (or completion of degree within the past year)

Applications must be submitted by email as one combined document (PDF files preferred). You should submit the single document with the three application parts in the following order: cover letter, adviser letter, and paper. For further information or to apply, contact Adam Ciarleglio at *aciarleglio@email.gwu.edu.* All materials must be received by December 15 at 5 p.m. EST.

Winners will be notified by January 15, 2020. ■

GSS Honors Data Expo 2019 Winners

The Government Statistics Section (GSS), Statistical Computing Section, and Statistical Graphics Section jointly hosted the annual Data Challenge Expo at the Joint Statistical Meetings (JSM) in Denver, Colorado.

The data set for the 2019 challenge was the New York City Housing and Vacancy Survey (NYCHVS), a representative survey of the New York City housing stock and population sponsored by the New York City Department of Housing Preservation and Development (HPD) and the longest-running housing survey in the country. Results of the analysis were presented in a speed poster format.

The following winners were honored at the three section business meetings during JSM:

Education Category

First place: Xiang Shen, The George Washington University

Second place: Ben Schweitzer, Miami University

Third place (tie): Alison Tuiyott, Miami University

Third place (tie): Jacob Gerszten and Damian Chambon, University of Virginia

Professional Category

Quentin Brummet, NORC

Ed Mulrow, NORC ■

Jacob Gerszten of the University of Virginia won third place in the educational category. He is here with ASA President-elect Wendy Martinez.

Ed Mulrow won in the professional category. He is here with ASA President-elect Wendy Martinez.

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

2019

December

***2–6—75th Annual Deming Conference on Applied Statistics, Atlantic City, New Jersey**
For details, visit *demingconference.org* or contact Din Chen, 325 Pittsboro St., Chapel Hill, NC 27599; (919) 843-2434; *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*.

21–23—MSAST 2019, Kolkata, India
For details, visit *imbicorg.blogspot.com* or contact Avishek Adhikari, AH 317, Sector II, Kolkata, International 700091, India; *msast.paper@gmail.com*.

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*.

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; (703) 684-1221; *meetings@amstat.org*.

March

»24–27—SIAM Conference on Uncertainty Quantification (UQ20), Garching, Germany
For details, visit *siam-uq20.ma.tum.de* or contact Jade Daniels, 3600 Market St., Philadelphia, PA 19104; (215) 382-9800; *daniels@siam.org*.

May

»5–7—SIAM Conference on Mathematics of Data Science (MDS20), Cincinnati, Ohio
For more information, contact Adrianne Ali, 3600 Market St., Philadelphia, PA 19104; (215) 382-9800; *ali@siam.org*.

June

»*3–6—2020 Symposium on Data Science & Statistics, Pittsburgh, Pennsylvania
For more information, visit *ww2.amstat.org/meetings/sdss/2020* or contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; *meetings@amstat.org*.

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.*

»22–26—International Statistical Ecology Conference (ISEC2020), Sydney, Australia
For more information, visit *isec2020.org* or contact David Warton, School of Mathematics and Statistics, UNSW Sydney, International 2052, Australia; +61405781724; *isec2020@unsw.edu.au*.

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 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*.

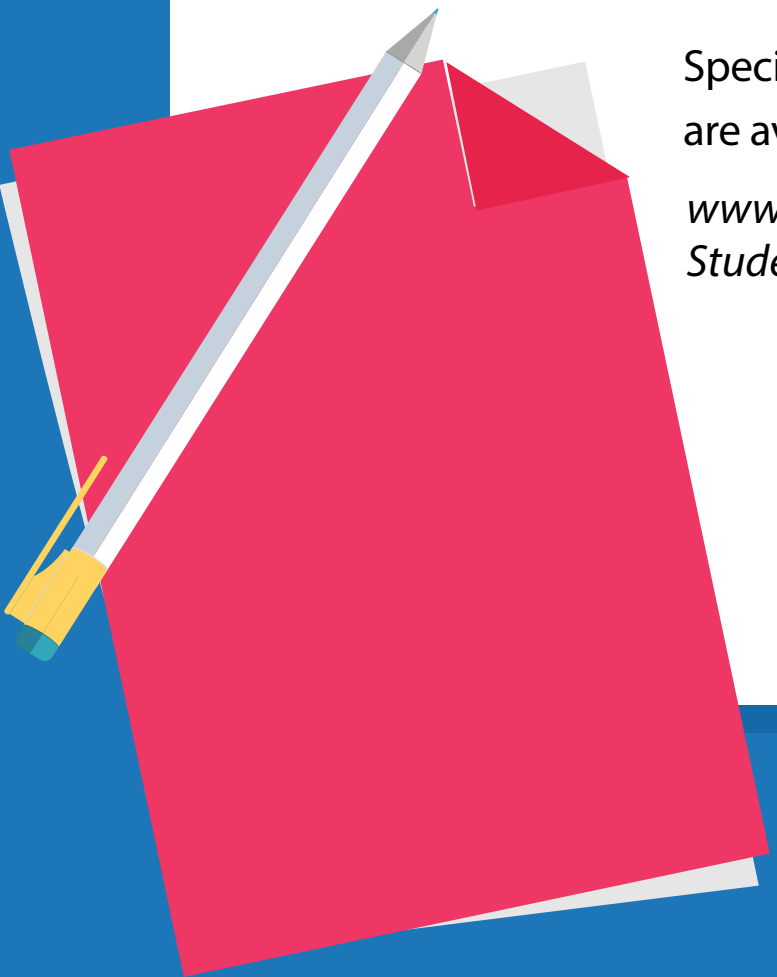
6–10—International Conference on Robust Statistics (ICORS 2020), Vienna, Austria
For details, contact Peter Filzmoser, Wiedner Hauptstr. 8-10, Vienna, International 1040, Austria; 43-1-58801-10560; *P.Filzmoser@tuwien.ac.at*.

August

***1–6—2020 Joint Statistical Meetings, Philadelphia, Pennsylvania**
For more information, contact ASA Meetings, 732 North Washington St., Alexandria, VA 22314; *meetings@amstat.org*.

ASA SECTIONS
STUDENT PAPER COMPETITION

The winners of best paper competitions earn travel awards to ASA-sponsored conferences



Special instructions for each section are available on the ASA website.

www.amstat.org/ASA/Your-Career/-Student-Paper-Competitions.aspx

»6–8—26th ISSAT International Conference on Reliability and Quality in Design, Miami, Florida
For more information, visit *www.issatconferences.org/rqd2020.html* or contact Conference Secretary, PO Box 281, Edison, NJ 08818; *rqd@issatconferences.org*.

December

»15–17—28th International Workshop on Matrices and Statistics (IWMS 2020), MAHE, Manipal, India
For details, visit *carams.in/events/international-workshop-on-matrices-and-statistics* or contact Manjunatha Prasad Karantha, VI Floor, Health Science Library Building, Manipal Academy of Higher Education, Manipal, International 576104, India; +91 9980100886; *kmprasad63@gmail.com*.

»17–19—International Conference on Linear Algebra and Its Applications (ICLAA 2020), MAHE, Manipal, India
For more information, visit *carams.in/events/iclaa2020* or contact Manjunatha Prasad Karantha, VI Floor, Health Science Library Building, Manipal Academy of Higher Education, Manipal, International 576104, India; +919980100886; *kmprasad63@gmail.com*. ■

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*.

District of Columbia

■ The Department of Statistics at The George Washington University (GWU) Foggy Bottom campus invites applications for a tenure-track assistant professor position to begin as early as fall 2020, pending final budgetary approval. All areas of statistics will be considered. The department's location in the nation's capital offers unique cultural and professional opportunities. For more details and the complete application information, please visit *www.gwu.jobs* and *statistics.columbian.gwu.edu*. The university is an Equal Employment Opportunity/Affirmative Action employer that does not unlawfully discriminate in any of its programs or activities on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity or expression, or on any other basis prohibited by applicable law. The university and department have a strong commitment to achieving diversity among faculty and staff. We are particularly interested in receiving applications from members of underrepresented groups and strongly encourage women and persons of color to apply for this position.

Florida

■ The Department of Statistics at Florida State University invites applications for assistant professor in statistics. A PhD in statistics, biostatistics, or a related field is required. Please apply at *http//jobs.fsu.edu* (Job ID 46279). The deadline is January 20, 2020. FSU is an Equal Opportunity/Access/Affirmative Action/Pro Disabled & Veteran Employer. FSU's Equal Opportunity Statement can be viewed at *www.hr.fsu.edu/PDF/Publications/diversity/EEO_Statement.pdf*.

■ University of Florida is recruiting up to three tenure-track assistant, associate or full professor level positions within the Department of Biostatistics, administered by College of Medicine and College of Public Health and Health Professions. Qualifications include: a doctoral degree in biostatistics or related quantitative discipline and demonstrated excellence in research, teaching and service. Application review will begin immediately. Please apply Job No. 51907 at *https//apply.interfolio.com/67683*. The University of Florida is an equal opportunity institution dedicated to building a broadly diverse and inclusive faculty and staff. Hiring is contingent upon eligibility to work in the US. Searches are conducted in accordance with Florida's Sunshine Law.

■ The Department of Statistics at Florida State University invites applications for assistant professor in Biostatistics. A PhD in statistics, biostatistics, or a related field is required. Please apply at *http//jobs.fsu.edu* (Job ID 46278). The deadline is January 20, 2020. FSU is an Equal Opportunity/Access/Affirmative Action/Pro Disabled & Veteran Employer. FSU's Equal Opportunity Statement can be viewed at *www.hr.fsu.edu/PDF/Publications/diversity/EEO_Statement.pdf*.

Indiana

■ Purdue University, Department of Statistics invites applications for multiple faculty positions beginning August 2020 at the rank of assistant professor or associate professor, with possible rank of full professor for qualified candidates. Please visit *www.stat.purdue.edu/hiring* to apply. Review of applications will begin November 15, 2019, continuing until positions are filled. Purdue University is an Equal Opportunity/Equal Access/Affirmative Action employer fully committed to achieving a diverse workforce.

Iowa

■ The University of Iowa is seeking an assistant professor of data science to begin August 19, 2020. Applicants must have PhD in statistics or related area by start date. See the complete description at *https//jobs.uiowa.edu/faculty/view/73767* and apply by

November 15. EOE/AA. Check out our department at *https//stat.uiowa.edu*. EOE/AA.

Maine

■ Husson University invites applications for a full-time, ranked faculty position in applied statistics or data analytics - level of assistant professor to begin in fall 2020. Appointment at higher rank will considered for qualified candidates. Teaching responsibilities include 12 credit hours per semester of statistics and research design courses at the general education level, data analytics courses, as well as upper-level statistics courses. *www.Click2Apply.net/5j7rs55ptrv8bd4v*. EOE.

Massachusetts

■ Harvard T.H. Chan School of Public Health. Assistant/associate professor of biostatistics and assistant/associate professor of epidemiology. Please apply to *http//academicpositions.harvard.edu/postings/9218*. For questions, please contact Megan Marchese, Search Administrator, Department of Epidemiology, Harvard T.H. Chan School of Public Health. Email *marchese@hsph.harvard.edu*. EOE.

■ The Department of Biostatistics at Boston University invites applications for an assistant professor or open-rank level position beginning fall 2020. Outstanding applicants are encouraged to apply, including those with expertise in data science and related disciplines. The position involves excellence in scholarship and graduate-level teaching. Boston University is committed to fostering a diverse and inclusive community. Please apply by November 30, 2019, at *https//academicjobsonline.org/ajo/jobs/14719*. EOE.

Minnesota

■ The Division of Biostatistics, School of Public Health, University of Minnesota seeks applicants for a non-tenure track (contract) faculty position at the rank of Assistant Professor, who will be part of an inter-departmental Childhood Cancer

DEPARTMENT OF STATISTICS

COLUMBIA UNIVERSITY

FACULTY POSITION (TENURE-TRACK) STARTING FALL 2020

The Department of Statistics invites applications for a tenure-track Assistant Professor position to begin July 1, 2020. A Ph.D. in statistics or a related field is required. Candidates will be expected to sustain an active research and publication agenda and to teach in the departmental undergraduate and graduate programs. The field of research is open to any area of statistics and probability.

The Department currently consists of 35 faculty members, 59 PhD students, and over 300 MA students. The Department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who through their research, teaching and/or service will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the Department and our programs, please go to our webpage at: *http://www.stat.columbia.edu*

All applications must be submitted through Columbia's online Recruitment of Academic Personnel System (RAPS) at:
http://pa334.peopleadmin.com/postings/4156

The application must include a cover letter, curriculum vitae, statement of teaching philosophy, research statement and the names of 3 references. References will be asked to upload letters of recommendation in RAPS.

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

Review of applications begins on November 29, 2019, and will continue until the position is filled.
Columbia University is an Equal Opportunity/Affirmative Action employer.

Genomics Group focused on pediatric cancer research. Applicants should have an interest in statistical genetics or bioinformatics and interdisciplinary collaborative research. Please visit *https//hr.myu.umn.edu/jobs/ext/333098* for additional information or to apply. EOE.

■ The Division of Biostatistics, School of Public Health, University of Minnesota seeks applicants for a tenure-track assistant professor faculty position. We are especially interested in individuals with research interests in causal inference, dynamic treatment regimes, biomarker evaluation, risk prediction, longitudinal and multilevel data, and the design and monitoring of clinical trials, including those for adaptive interventions. Please visit *https//hr.myu.umn.edu/jobs/ext/333095* for additional information or to apply. EOE.

■ The Division of Biostatistics, School of Public Health, University of Minnesota seeks applicants for a non-tenure track (contract) faculty position at the rank of assistant or associate professor, who will be a member of the Biostatistics Core of the Masonic Cancer Center and collaborate on cancer-related projects with investigators in the basic, clinical, and population sciences. Please visit *https//hr.myu.umn.edu/jobs/ext/333104* for additional information or to apply. EOE.

Nebraska

■ The Department of Biostatistics, College of Public Health at the University of Nebraska Medical Center (UNMC), seeks outstanding faculty candidates for an assistant or associate professor for a tenure-leading position; rank commensurate with qualifications. For

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

The Department of Statistics at the George Washington University Foggy Bottom campus invites applications for a tenure-track assistant professor position to begin as early as Fall 2020, pending final budgetary approval. All areas of statistics will be considered. The selected candidate is expected to maintain a strong research program and teach undergraduate and graduate statistics courses.

Basic Qualifications: Applicants must possess a Ph.D. or Doctorate in statistics, biostatistics or a closely related field. ABD candidates will be considered, but must complete all Ph.D. or Doctoral degree requirements by the date of appointment. Applicants must have strong training in probability and statistics, and demonstrated interest in developing statistical methods for applications. Applicants must have demonstrated teaching excellence indicated by research presentations and teaching assessments, and commitment to research as evidenced by publication in scholarly journals and works in progress.

Application Information: To apply, please complete an online application at http://www.gwu.jobs/postings/70806 and upload a cover letter, curriculum vitae, graduate transcripts, research and teaching statements, sample research publications or works in progress, and arrange to send three letters of recommendation to Search Committee, Department of Statistics, Phillips Hall, George Washington University, Washington, DC 20052, USA or to stathire@gwu.edu by email. Review of applications will begin on January 2, 2020 and will continue until the position is filled. Only complete applications will be considered. Employment offers are contingent on the satisfactory outcome of a standard background screening.

The George Washington University is an Equal Employment Opportunity/Affirmative Action employer that does not unlawfully discriminate in any of its programs or activities on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity or expression, or on any other basis prohibited by applicable law. The university and department have a strong commitment to achieving diversity among faculty and staff. We are particularly interested in receiving applications from members of underrepresented groups and strongly encourage women and persons of color to apply for this position.

Eleanor and Howard Morgan Professorship School of Operations Research and Information Engineering

The School of Operations Research and Information Engineering at Cornell University invites exceptional applicants for the Eleanor and Howard Morgan Professorship. The School of ORIE seeks visionary candidates who will drive new research thrusts, catalyze growth in existing areas, and help lead efforts to realize the School's vision of a world in which operation research and analytics are fundamental to improved decision-making that helps address some of society's most pressing problems.

Cornell ORIE is a diverse group of high-quality researchers and educators interested in probability, optimization, statistics, machine learning, simulation, and a wide array of applications including, but not limited to, e-commerce, supply chains, scheduling, manufacturing, transportation and mobility, health care, financial engineering, service systems and network science. We value mathematical and technical depth and innovation, and experience with applications and practice. Ideal candidates will have correspondingly broad training and interests. The School of Operations Research and Information Engineering spans both the traditional Cornell campus in Ithaca and the new presence at Cornell Tech on Roosevelt Island in New York City. This position is for the Cornell Ithaca campus, but the potential for connection with the Cornell Tech campus and its associated mission of external engagement is desirable.

Applicants should submit a curriculum vitae, statement of research and leadership vision, and complete contact information for at least three references. Applications will be accepted until the position is filled. Submit applications online at **https://academicjobsonline.org/ajo/jobs/14253**. Questions may be addressed by email to David Shmoys, Chair, Eleanor and Howard Morgan Chair Search Committee at **morganchairsearch@cornell.edu**.

ORIE and the College of Engineering at Cornell embrace diversity and seek candidates who can contribute to a welcoming climate for students, staff and faculty of all races and genders. Cornell University seeks to meet the needs of dual career couples, has a Dual Career program, and is a member of the Upstate New York Higher Education Recruitment Consortium to assist with dual career searches. Visit **www.unyherc.org/home** to see positions available in higher education in the upstate New York area.

Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students and staff impart an uncommon sense of larger purpose and contribute creative ideas to further the university's mission of teaching, discovery and engagement. With our main campus located in Ithaca, NY Cornell's far-flung global presence includes the medical college's campuses in Manhattan and Doha, Qatar, as well as the new Cornell Tech campus located on Roosevelt Island in the heart of New York City.

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities. We strongly encourage women and underrepresented minorities to apply.

a full job description and application requirements, go to *http//unmc.peopleadmin.com/postings/47669*. UNMC is an Equal Opportunity/Affirmative Action Employer. Individuals from diverse backgrounds are encouraged to apply.

■ The Department of Mathematics at the University of Nebraska - Omaha (UNO) invites applications for a full-time tenure-track assistant-professor position in statistics and data science beginning in August 2020. Applicants are expected to have a PhD in statistics or a closely related field by August 15, 2020. Submit applications online at *https//unomaha.peopleadmin.com/user/new*. EOE/AA

Pennsylvania

■ The Wharton Statistics Department, University of Pennsylvania, has a full-time, tenure-track Assistant Professor position, beginning July 2020. Applicants must show outstanding research and teaching skills. Candidates must have a PhD or equivalent (expected completion by June 30, 2021, is acceptable) from an accredited institution. Please apply at *https//statistics.wharton.upenn.edu/recruiting/facultypositions*. Submitting all required documents by December 1 is encouraged for full consideration. Forward questions to *statistics.recruit@wharton.upenn.edu*. The University of Pennsylvania is an EOE. Minorities / Women / Individuals with disabilities / Protected Veterans are encouraged to apply.

Texas

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

■ The Department of Mathematics and the Department of Biological Sciences at the University of North Texas invite

DEPARTMENT OF STATISTICS

Columbia University

Distinguished Postdoctoral Fellow in Statistics Positions Starting Fall 2020

The Department of Statistics invites applications for Distinguished Postdoctoral Fellowships in Statistics. These fellowships seek to bring exceptional scientists of outstanding potential to Columbia University. These two-year fellowships, with no teaching obligations, are to begin between July and September 2020. The Fellows will hold the rank of postdoctoral research scientist in the Department of Statistics. A competitive annual salary will be supplemented with generous funding for conference travel and research support.

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

The Department currently consists of 35 faculty members and 59 PhD students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who, through their research, teaching and/or service, will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: *http://www.stat.columbia.edu*

All applications must be submitted through Columbia's online Recruitment of Academic Personnel System (RAPS) at: *http://pa334.peopleadmin.com/postings/4198*

The application must include the following:

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

Review of applications begins on January 13, 2020, and will continue until the position is filled.

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

Columbia University is an Equal Opportunity/Affirmative Action employer —Race/Gender/Disability/Veteran.

applications for a joint tenure-track Assistant Professor position. Applicants must apply online at *http//facultyjobs.unt.edu* (posting no. 6002419) with a cover letter, current vita, unofficial transcript, contact information of three references, research statement and teaching statement. Review of applications begins October 15, 2019, until the position is closed. EOE.

Wisconsin

■ Multiple tenure-track assistant professor positions in UW-Madison Statistics Department, beginning August 2020. PhD in statistics or related quantitative field required. Experience in data science, machine learning, statistical computing, or Bayesian statistics desirable. Faculty at UW-Madison teach courses, conduct research, and participate in service and outreach. Apply at *https//jobs.hr.wisc.edu/en-us/job/502964/assistant-professor-of-statistics*. EOE.

DEPARTMENT OF STATISTICS

Columbia University
Lecturer in Discipline Position Starting Fall 2020

The Department of Statistics invites applications for a position at the rank of Lecturer in Discipline that begins July 1, 2020. It is a full-time appointment with multi-year renewals contingent on successful reviews. This position is to contribute to the Departmental educational mission at the undergraduate and masters level.

Lecturers in Discipline are officers in the University who meet a programmatic need for instruction in specialized fields. The selected candidate will be expected to teach 3 courses per semester. A Ph.D. in Statistics or related field and a commitment to high-quality teaching at both the undergraduate and MA levels in Statistics and/or Probability are required. Experience with online education is desirable but not required. Candidates will be expected to participate in the full gamut of statistics education including curriculum improvement, modifying and developing courses, and exploring new strategies for the teaching of statistics.

The department currently consists of 35 faculty members and 59 PhD students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who, through their research, teaching and/or service, will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: *http://www.stat.columbia.edu.*

All applications must be submitted through Columbia's online Recruitment of Academic Personnel System (RAPS) and must include the following materials: cover letter, curriculum vitae, statement of teaching philosophy, research statement, evidence of teaching effectiveness (teaching evaluations), a sample of course syllabus and the names of 3 references into the system. Applicants also should arrange for three letters of recommendation to be uploaded on their behalf. For more information and to apply, please go to: *http://pa334.peopleadmin.com/postings/4191*

Inquiries may be made to Dood Kalicharan at *dk@stat.columbia.edu*

Review of applications begins on January 6, 2020 and will continue until the position is filled.

Columbia University is an Equal Opportunity/Affirmative Action employer.

NC STATE UNIVERSITY

Department of Statistics
Tenure-Track Faculty Positions

The Department of Statistics at North Carolina State University seeks to hire multiple tenure-track faculty. All ranks will be considered. The start date is August 2020.

Applicants with interests and expertise in theoretical or methodological research in any area of statistics or biostatistics will be considered. Candidates with interests in data science, machine learning, and modern methods of data analysis more generally are encouraged to apply. The ability and desire to supervise graduate student research and to pursue excellence in teaching are essential.

To apply, please visit: https://jobs.ncsu.edu/postings/120549

The Department provides a dynamic environment for teaching, research and collaborations across disciplines. Inclusiveness and diversity are academic imperatives and are university goals: You will be expected to foster an environment that is supportive and welcoming of all groups. We are interested in candidates who have experience working with students from diverse backgrounds and have a demonstrated commitment to improving access to higher education for students from underrepresented groups.

The Department's location in the Research Triangle provides rich opportunities for interactions with industry; other universities, including Duke University and the University of North Carolina at Chapel Hill; and government agencies. Faculty enjoy collaborations with medical researchers at Duke, environmental scientists at the EPA research facility, pharmaceutical researchers at Glaxo-SmithKline, and software developers at SAS Institute, among many others. The Department is also a founding cooperator of the NSF-funded Statistical and Applied Mathematical Sciences Institute (SAMSI), located nearby in Research Triangle Park.

All applicants must have a Ph.D. in Statistics or Biostatistics or a related field by the time of employment. Review of applications will begin soon, and continue until the positions are filled. Questions about the search may be directed to the Search Committee Chair (stat_search@stat.ncsu.edu).

NC State University is an equal opportunity and affirmative action employer. Women and members of other underrepresented groups are encouraged to apply. In addition, NC State University welcomes all persons without regard to sexual orientation or genetic information.

DEPARTMENT OF STATISTICS

Columbia University
Assistant Professor (Limited-term) Positions starting Fall 2020

The Department of Statistics invites applications for four-year term positions at the rank of Assistant Professor to begin July 1, 2020. A PhD in statistics or a related field is required, as is a commitment to high quality research and teaching in statistics and/or probability. Candidates will be expected to sustain an active research and publication agenda and to teach in the departmental undergraduate and graduate programs. Candidates with expertise in machine learning, big data, mathematical finance and probability theory are particularly encouraged to apply.

The department expects to support successful candidates with a generous research allowance. The expected teaching load is three semester-long courses per year.

The department currently consists of 35 faculty members and 59 PhD students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who, through their research, teaching and/or service, will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: *http://www.stat.columbia.edu*

All applications must be submitted through Columbia's online Recruitment of Academic Personnel System (RAPS) at: http://pa334.peopleadmin.com/postings/4158

The application must include a cover letter, curriculum vitae, teaching statement, research statement and the names of 3 references. References will be asked to upload letters of recommendation in RAPS.

Inquiries may be made to Dood Kalicharan at *dk@stat.columbia.edu*

Review of applications begins on December 2, 2019, and will continue until the position is filled.

Columbia University is an Equal Opportunity/Affirmative Action employer – Race/Gender/Disability/Veteran.

■ Multiple tenure-track assistant professor positions in UW-Madison Statistics Department, beginning August 2020. PhD in statistics or related quantitative field required. Experience in data science, machine learning, statistical computing, or Bayesian statistics desirable. For more information, visit *www.stat.wisc.edu*. EOE.

CANADA

Ontario

■ The Department of Statistics and Actuarial Science, University of Waterloo invites applications for 6 tenure-track or tenured position in Statistics, biostatistics or data science, or as circumstances warrant. A PhD in statistics, biostatistics or related areas is required. Apply through (*www.mathjobs.org/jobs*). Include cover letter, CV, research/teaching statements, up to three reprints/preprints and three reference letters. Full advertisement: *https://uwaterloo.ca/statistics-and-actuarial-science/available-positions.* Closing November 20, 2019. EOE/AA. ■

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Full Name	Complete Mailing Address

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Amstat News	September 2019

15. Extent and Nature of Circulation		Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
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i. Percent Paid (15c divided by 15f times 100)		100	100

16. Publication of Statement of Ownership
☒ If the publication is a general publication, publication of this statement is required. Will be printed in the November 2019 issue of this publication. ☐ Publication not required.

17. Signature and Title of Editor, Publisher, Business Manager, or Owner: Associate Executive Director and Director of Operations — Date: 9/17/19

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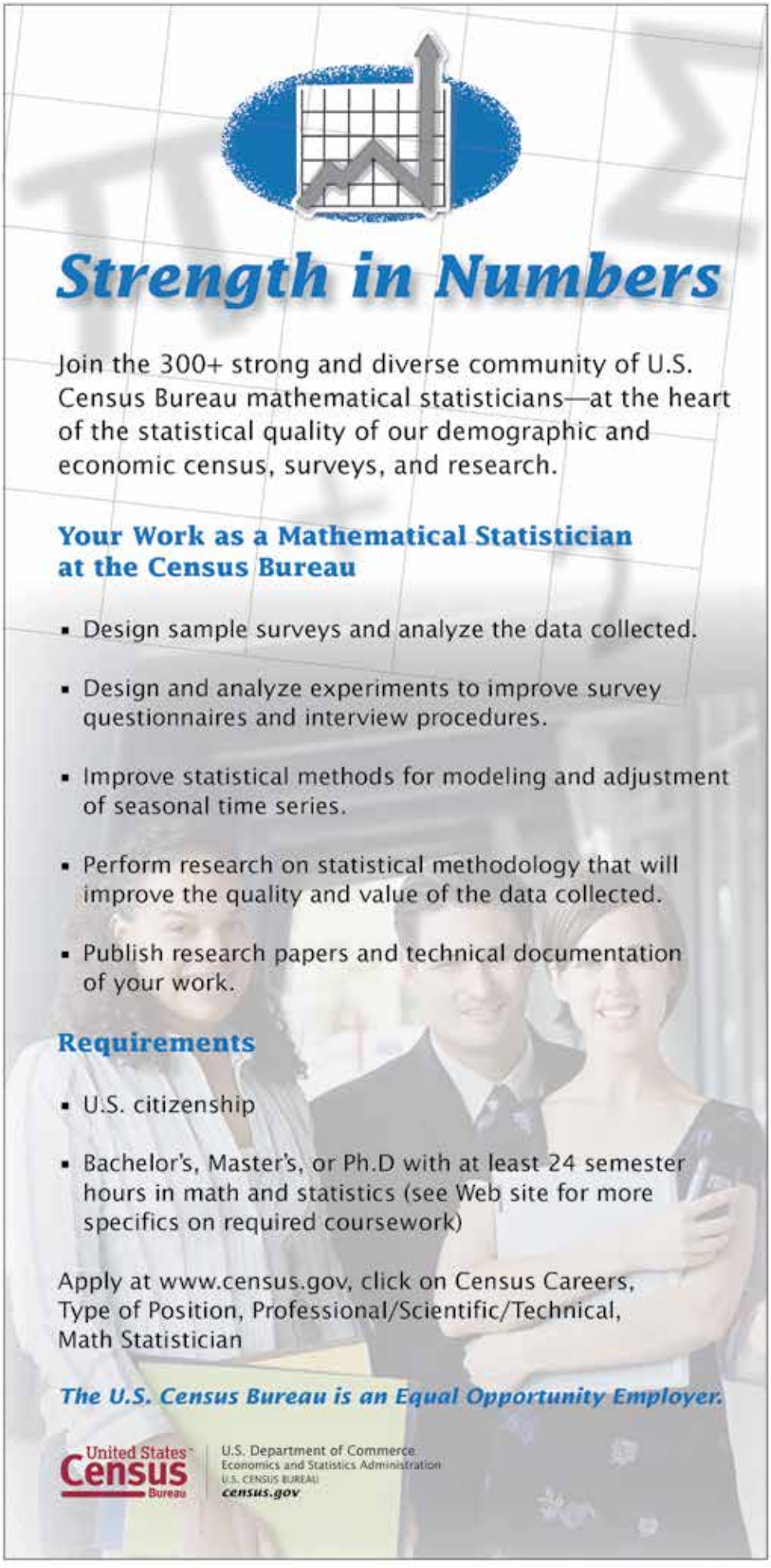

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1. Be kind
2. Be thoughtful
3. Build models to answer questions, not b/c you think you have to
4. Embrace variation
5. Embrace simple models
6. Not everything is normal (that's ok)
7. Check your assumptions
8. Allow for mistakes
9. Save your code
10. Invite people in

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Non-random survey is a mortal sin.

Jim Blevins • @JBlevins0

1. "Do not block the way of inquiry!"
2. "Probabilities that are strictly objective and at the same time very great, although they can never be absolutely conclusive, ought nevertheless to influence our preference for one hypothesis over another; but slight probabilities, even if objective, are not worth consideration; and merely subjective likelihoods should be disregarded altogether. For they are merely expressions of our preconceived notions." *(7.227 in Collected Papers of Charles S. Peirce)"*

Lee D. Witt

Ask questions, understand your clients' problems, write clearly.

Eric J. Daza

Thou shalt report all tested hypotheses to be a priori or post hoc, or explain if otherwise.

Cliff Claven

Is the data truly representative of the issue being analyzed? As for a real book, there is "Sampling Techniques" by William Cochran.

Kristin Rahn

The classic... all models are wrong.

John Bartko

Yes indeed there is. The younger statisticians may not be aware of the statistical giant W. Edwards Deming, whose writings include:

- The Code of Professional Conduct, Int. Stat. Rev, Vol 40, No. 2, 1972, pp215-219.
- Principles of Professional Statistical Practice. Annals of Mathematical Statistics, Vol 36, No. 6, December 1965, pp1883-1900, and
- Some Responsibilities of the Statistician. Industrial Quality Control, Vol XX, No. 9, March 1964, pp 1-4.

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