

December 2016 • Issue #474

AMSTATNEWS

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ALSO:

ASA and Census ... A Long and Productive Relationship

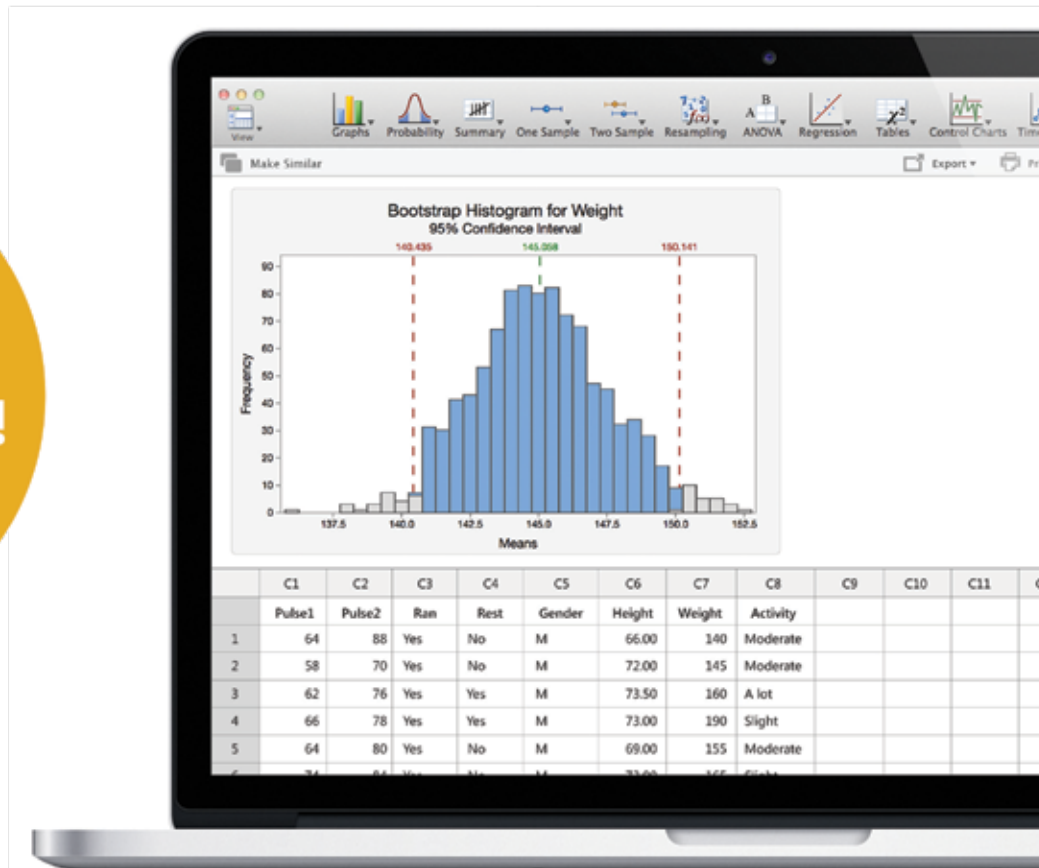
ASA Leaders Reminisce: Sally C. Morton



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

- 25 **SCIENCE POLICY**
Crooked Roads: IRS Statistics of Income at 100
William Blake, Mick Jagger, and the Next 100 Years for SOI and Other Federal Statistical Agencies

This column is written to inform ASA members about what the ASA is doing to promote the inclusion of statistics in policymaking and the funding of statistics research. To suggest science policy topics for the ASA to address, contact ASA Director of Science Policy Steve Pierson at pierson@amstat.org.

We Want to Hear from You!

Are you working on research or applications involving statistics that could affect the public? Tell us about it! The ASA's public relations team is always looking for unique and newsworthy stories to promote to media and inform consumers. Contact Jill Talley, ASA public relations manager, at jill@amstat.org to share your news and showcase the value of statistics.

Online Articles

The following articles in this issue can be found online at <http://magazine.amstat.org>.

Alicia Carriquiry, distinguished professor of statistics at Iowa State University, has been elected to the National Academy of Medicine—one of 70 new members selected for the coveted appointment. "I'm so honored, flattered, and humbled. It's very rewarding," said Carriquiry in an Iowa State University news statement. "In life, you have successes and failures, and to receive recognition like this makes you realize that all the hard work throughout your career was worth it." Read more about the award and Carriquiry's work at <http://magazine.amstat.org>.

Biostatistics and Research Awareness Initiatives Network, Inc. (**BRAIN**) has been awarded a \$28,227.24 service-learning grant from the State Farm Youth Advisory Board (YAB) to support 10 Buchtel Community Learning Center students in optometry research at Akron Children's Hospital. **Lillian Prince**, fellow of the ASA and executive director of BRAIN, said the funds will allow the students to gain statistical data analysis skills and conduct research to help clinicians address health issues affecting their communities. Visit *Amstat News* online to read more about the BRAIN project and YAB at <http://magazine.amstat.org>.

Calyampudi Radhakrishna Rao has contributed to facets of modern statistics such as differential-geometric methods in statistics, score test, quadratic entropy, orthogonal arrays, multivariate analysis, and generalized inverse of a matrix (singular or not) and its applications. **Frank Nielson** interviewed Rao this past year to learn more about his life and work. Read the interview online at <http://magazine.amstat.org>.

CORRECTION

In the November issue, David Morganstein's presidential term was incorrect. He was ASA president in 2015.

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Presidential Transitions

This is my last President's Corner, and I am happy to be turning things over to our 112th president, Barry Nussbaum, who I am sure will provide many entertaining and thought-provoking words of wisdom in these columns. As we all know, there is another, even more consequential presidential transition happening in the next few months as well, and therefore this column addresses two relatively unrelated themes—one relevant to each of these two presidential transitions.

Let's Not Let the Data Speak for Themselves

Here is a riddle: What does my personal fitness tracker have to do with the 2016 United States presidential election polls? And what do they both have to do with the future of statistics? The answer is they have both provided erroneous data, and they both serve as examples of why statisticians are needed now—more than ever—to understand, interpret, and explain the integrity of data.

By now, almost everyone has read or heard potential explanations for why many of the polls got the predictions for the U.S. presidential election wrong, including the possibility that the polls would have been right if they had not influenced voting behavior. Clearly, the problem exceeded what would be expected from sampling error, and some potential explanations include using the wrong sampling frame

(not enough rural voters), a propensity to lie (Hillary was a more socially acceptable answer), unequal strength of conviction from those supporting the two candidates that was not accounted for (Trump supporters more likely to vote, especially in areas with long waiting times), and so on. I'm sure there will be more analyses in the coming months, and there may still be some surprises as final vote tallies come in. (They are not all finalized as I am writing this.) But in the months leading up to the election, several statisticians shared their concerns with me that the polls suffered from these problems and were likely to be wrong, based on the larger context of what they were seeing.

What about the fitness tracker? A few days ago, I was in Vietnam and took a four-hour bus ride from Ha Long Bay to Hanoi. When I arrived, my fitness tracker had given me credit for taking 9,124 steps and climbing 81 flights of stairs during those four hours, even though I only left my seat once during a short rest stop. Like elsewhere, the roads in Vietnam could use some improvements, and the continuous bouncing mimicked the cadence of walking and climbing stairs. In the opposite extreme, I once walked the full length of the Atlanta airport with my hand on my four-wheeled suitcase and got no credit for any steps. I've noticed a similar lack of credit when wheeling a grocery

cart, and pushing a baby stroller allegedly has the same effect. Because I was there to watch these data errors occur, I knew the data were unreliable in those situations.

When I told this story to a nonstatistician friend, I thought it was just a quirky story with no real consequences. But she explained that such is not the case. The health plan where she works sets rates based on data acquired from employees' personal fitness devices! So in that case, the integrity of the data from the device has important financial consequences to the wearer. And it is unlikely that the insurance company is going to be able to differentiate between the user running a marathon and taking a long and slow bus ride on a bumpy road. Auto insurance rates, too, are sometimes tied to driver behavior and distances traveled. Are there ways those data collection efforts can be fooled, as well?

We often hear there has never been a more exciting time to be a statistician. Jobs are plentiful, pay is good, and *U.S. News and World Report* has ranked statistician as the #1 best business job, based on a combination of factors: <http://money.usnews.com/careers/best-jobs/statistician>.

However, I also believe this is a time when it is more important than ever for statisticians to take responsibility for thinking and talking about the quality and integrity of data. We may not always recognize erroneous data,



Jessica Utts

... statisticians need to be proactive in helping people understand the role of data and statistics, and we need to speak out about abuses.

but we are in a better position than most to do so and we know how to design studies to collect useful data. We also need to help ensure that important decisions are based on data, rather than on opinions and politics. That means statisticians need to be proactive in helping people understand the role of data and statistics, and we need to speak out about abuses.

To that end, my presidential initiatives were geared to provide resources for statisticians to reach out, particularly to students and the media. The working group charged with creating materials for statisticians to talk with high-school students about statistics careers has done a wonderful job of providing resources. I want to highlight those resources here, because they are also useful for statisticians to become more broadly aware of what others in our profession do. You can find the group's work here: www.amstat.org/ASA/Education/K-12-Student-Outreach.aspx.

There are some great videos and other resources listed under "Tips and Tricks" and "What do statisticians and data scientists do?" that will help us all become better acquainted with what others of us do. And once you feel comfortable talking about our

profession, even more broadly than your own job, I encourage you to talk with lots of people about the benefits we provide. You can visit a high-school classroom or simply find opportunities to highlight the important work we do with your family, friends, and social media connections.

Words of Gratitude for My Presidential Year

It is traditional for ASA presidents to use the December President's Corner to thank those who have participated in making the year a success, and I am delighted to have the opportunity to do that. My warm thanks go to all the ASA staff members who work tirelessly to promote our profession and to keep the ASA vibrant and relevant. I particularly want to thank ASA Executive Director Ron Wasserstein, who seems to know everything that goes on in every corner of the ASA and the statistics world in general and who generously shares his expertise and advice.

Next, I would like to thank all those who invited me to participate in chapter visits and give conference presentations. I loved meeting so many of our members who are active in chapter work and enjoyed visiting the Nevada, Oregon, Pittsburgh, Milwaukee, Montana, and Boston chapters. I'm looking forward to a few more chapter visits scheduled for the coming year.

I enjoyed interacting with students at Smith, Amherst, and Mount Holyoke Colleges, as well as at the Career Day held by the Orange County/Long Beach ASA Chapter and iiData Conference held by the University of California, Davis Student Statistics Club. Talking with students about careers in statistics is one of my favorite activities!

Conference invitations took me on international trips to India and Bangladesh, with upcoming visits to China, Spain, and Sri Lanka, as well as to the Conference on Statistical Practice and Fall Technical Conference. I gained so much from interacting with statisticians at those venues and listening to many other interesting and informative talks. I am extremely grateful to everyone who was involved with providing those opportunities for me to visit and who made me feel welcome when I visited.

The ASA Board members I have worked with have been wonderfully supportive, and I thank them all. Another amazing source of support has been the community of past ASA presidents, many of whom have written to me and spoken with me, providing information, advice, and encouragement. I hope I can pay it forward with advice and encouragement for future presidents.

In my presidential address (www.youtube.com/watch?v=bEFaUg0roKw), I listed names of the members of the working groups appointed to implement my presidential initiatives, and I would like to again thank them for their work. The board members and staff who led these initiative working groups—Anna Nevius, Rob Santos, Wendy Lou, and Donna LaLonde—deserve special thanks. Donna was an active participant in all the initiatives and deserves a special thank you for her work.

Work on all the initiatives is continuing, but there is much to report on their success already. As mentioned earlier, the Careers in Statistics Working Group developed a useful website, www.amstat.org/ASA/Education/K-12-Student-Outreach.aspx, that provides resources for ASA members

who are willing to talk with high-school (or younger) students about the importance of statistics, including possible careers. The group also encourages ASA members to think about providing internships for high-school students. More about their activities can be found in the October issue of *Amstat News* (<http://magazine.amstat.org/blog/2016/10/01/presidents-invited>), including a link to register for a speakers bureau that will match professional statisticians with teachers who are looking for a speaker.

Two of my initiatives involve training statisticians to work more closely with the media. The Statistical Ambassadors initiative kicked off with a workshop at JSM, described in the September issue at http://magazine.amstat.org/blog/2016/09/01/presidentsinvited_improv), and the Media Training Workshop for all ASA members took place November 15–16 at ASA headquarters; see the accompanying photos.

The training was conducted by ASA partner Sense About Science and included about 25 trainees from across the USA, plus two participants from Canada. The participants received firsthand feedback from mainstream science journalists about how statisticians can help media make their stories better. Trainees also were able to develop and practice their own ‘elevator pitches’ about statistics. It was fun, inspiring, and insightful. And like the Statistical Ambassador training at JSM, participants left the training feeling like better statisticians.

Plans are underway to make more of these opportunities available for ASA members; look for details in *Amstat News* and through the ASA Community. And please let us know if you



Photo by Rob Santos

Participants of the inaugural Media Training Workshop for all ASA members held at ASA headquarters November 15–16



Photo by Sara Davidson

ASA members work in groups during the Media Training Workshop.

would be interested in sponsoring or participating in such a training.

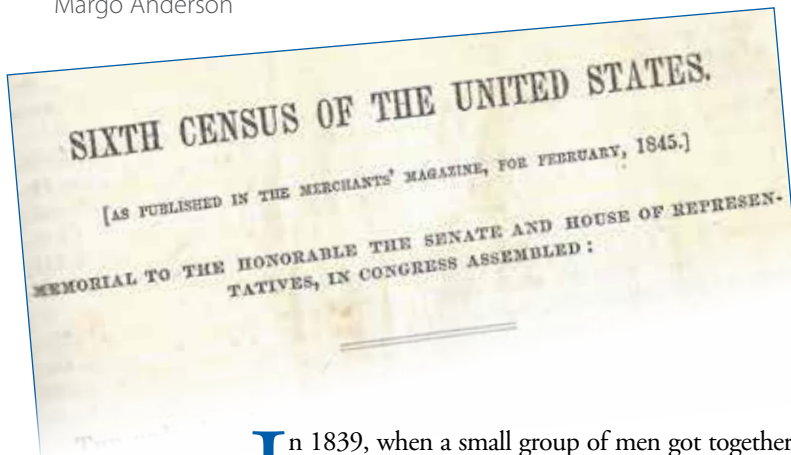
I have saved my final words of gratitude for the largest group to thank, and that’s the thousands of volunteers who are serving and have served on ASA committees and participated in chapter, section, editorial, and meeting activities. Many people have commented to me that the statistics community is such a welcoming and friendly one compared to

other academic communities. I couldn’t agree more. Without the help and support of so many of you, the ASA could never provide the rich array of services it provides. I will be forever grateful to have had the opportunity to serve as president of such an enriching organization.

Jessica Utts

ASA and Census ... A Long and Productive Relationship

Margo Anderson



In 1839, when a small group of men got together in Boston and founded the American Statistical Association for “the purpose of collecting, preserving, and diffusing statistical information,” they may not have realized what a momentous event it would be. The ASA was among a number of what were then called “learned societies” being established in the still relatively new United States, and most had modest goals: to bring together likeminded men of some intellectual interest to read and critique papers in a seminar setting and discuss their common interests. Most of these societies remained local affairs, often supported by the energetic personal interests of a few members, and many disappeared, merged with other societies, or functioned more as social clubs than intellectual venues.

Not the ASA. Though, in practical terms, the association remained firmly anchored in Boston (it didn’t hold its first meeting outside the city until the 1890s), these founding members made their way onto the national policymaking stage within a decade and joined in an international debate about statistical theory, statistical policy, and what was one of the key matters of controversy at the time: the census.

By 1840, the United States was taking its sixth census, mandated by the 1787 Constitution to apportion seats in the House of Representatives and Electoral College. Previous censuses were modest affairs—simple counts of the number of people by age, sex, civil condition (free or slave), and color for each household. At each census, Congress asked for a bit more information, experimenting, for example, with questions about occupation, immigration, and disability. By the sixth census, the questions had ballooned from their original six to more than 70, all on large unwieldy sheets of paper carried around by assistants to the United States marshals who went door to door to collect the information.

“Tabulation” of the results of this data collection was done in the field by the assistant marshal, who added up the totals for his local area and shipped the schedules and summaries to the U.S. marshal, who in turn added up the results for his area and shipped the lot to Washington. There, a “clerk” in the Secretary of State’s office, aided sometimes by a few assistants, compiled the national results, made minor corrections of arithmetic, and sent them to Congress so reapportionment could proceed.

Congress printed the results, basically as they came from the field. It wasn’t until 1830 (the fifth census) that the secretary printed a uniform schedule and sent that for use in the field. The whole effort took several years to collect and compile. Nevertheless, at each census, the effort got a bit more complex.

By 1840, the schedule was unwieldy at 70+ questions on large, two-sided pieces of paper. One of the questions in 1840 asked how many “white” and “colored” “insane and idiots” there were in the household. When the results were published, they seemed to show a dramatically higher rate for insanity for “colored” in the North (free states) than in the South (slave states). Debates about the abolition of slavery were intense at the time and defenders of slavery used the data to argue that African Americans were benignly held in “slavery” and would become insane if freed.

Absurd as this sounds today, the controversy exploded in the press, and members of the ASA entered the fray, trying to determine what had produced such results. Edward Jarvis, who would serve as ASA president for 30 years, examined census reports in detail and found that the column for “colored” insane was larger than the total number of “colored” in a local area in parts of New England. Since what fed the controversy were the comparative rates of insanity in North and South, small errors in the counts of insanity would be masked in the large slave populations in the South, but would stand out against the small populations of free colored in the North. There had to have been some mistake.

The ASA memorialized to ask that the results be corrected. They were not, but the controversy led ASA members (including Lemuel Shattuck, another ASA founder) and other officials to propose reform of 1850 census procedures, most notably to the use of the individual level rather than the household schedule, and thus the establishment of a large central office in Washington to tabulate the census. Congress adopted those reforms in May 1850 and the Census

Office became one of the largest administrative offices in government during the census period.

The Census Office was technically a “temporary” agency until 1902, though it often remained open for years before and after the actual ‘census period.’ ASA members became increasingly influential in the technical and administrative development of statistics and census taking, and census leadership frequently came from ASA membership. In turn, census officials from other professional venues came to join the ASA.

The ASA grew as the discipline of statistics expanded in the second half of the 19th century. Francis Walker—census superintendent in 1870 and 1880, ASA president from 1883 to 1896, and president of MIT from 1881 to 1897—led the push for the ASA to become a truly national organization in the 1890s.

At the end of World War I, the Census Bureau set up an official advisory committee, initially composed of members of the American Statistical Association and American Economic Association. The ASA continues today as part of the official advisory committee system for the census.

All because, I’d suggest, a few men in Boston in the early 1840s recognized they could help address technical problems of taking the census in a large diverse country, thus establishing the tradition in the ASA of contributing to both the development of statistics and the hard questions of American public policy. ■

Want to Know More?

There are a number of historical articles in *JASA* and *TAS* about the founding of statistical societies in the 19th century and the early relationships between the ASA and statistical innovation. See the following in particular:

Fitzpatrick, Paul J. “Leading American statisticians in the nineteenth century.” *Journal of the American Statistical Association* 52(279): 301–321. Stable URL: www.jstor.org/stable/2280901

_____. “Statistical societies in the United States in the nineteenth century.” *The American Statistician* 11(5): 13–21. Stable URL: www.jstor.org/stable/2682565

_____. “Leading American statisticians of the nineteenth century II.” *Journal of the American Statistical Association* 53(283): 689–701. Stable URL: www.jstor.org/stable/2282047

Regan, Opal G. “Statistical reforms accelerated by sixth census error.” *Journal of the American Statistical Association* 68(343): 540–546. Stable URL: www.jstor.org/stable/2284773

For background on the development of the field of statistics, statistical thinking, and census taking in the United States in the period, see the following:

Anderson, Margo. *The American census: A social history*. 2nd ed. New Haven: Yale University Press, 2015.

Cohen, Patricia Cline. *A calculating people: The spread of numeracy in early America*. Routledge; Revised edition (1999).

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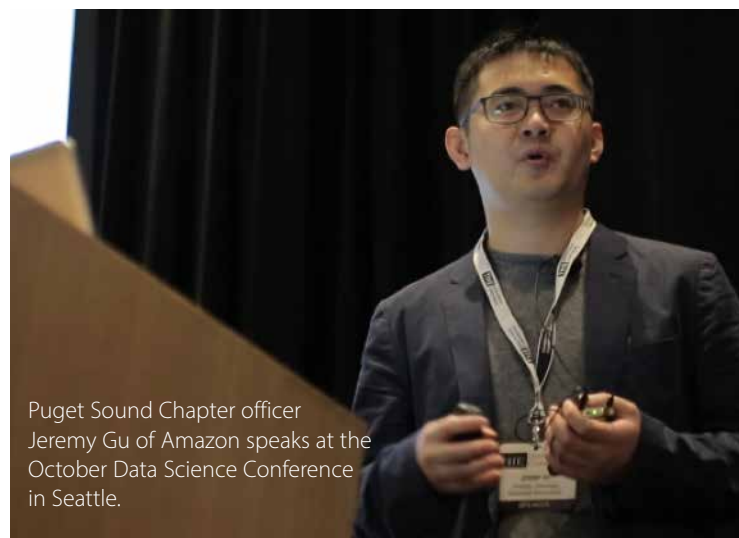
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Statisticians Speak at Data Science Conferences

Statisticians spoke at two data science conferences in October. David Donoho was keynote speaker and Richard De Veaux served as a special session chair at the third annual Data Science and Advanced Analytics (DSAA) Conference in Montréal, Québec. They were joined on the program by Stephan Sain of Climate Corporation and David Benkezer of the University of California, Berkeley. While not available to attend, Sherri Rose of Harvard and Tian Zheng of Columbia helped organize sessions.

DSAA is a conference of the IEEE Computational Intelligence Society that has featured a keynote presentation by a statistician each of its three years. The ASA joined as a platinum sponsor this year and is working to continue its sponsorship in future years. DSAA rotates its locations between Asia, Europe, and North America and will meet next year in Tokyo and in Turin, Italy, in 2018. Conference organizers are



Puget Sound Chapter officer Jeremy Gu of Amazon speaks at the October Data Science Conference in Seattle.

accepting proposals for a North-American venue in 2019.

Statisticians participating in DSAA spoke highly of the ASA being a sponsor and emphasized the importance of statisticians engaging scientists of other disciplines in the emerging field of data science. If you are interested in being involved in ASA sponsorship of DSAA, contact ASA Director of Science Policy Steve Pierson at pierson@amstat.org.

At the Data Science Conference (www.thedatascienceconference.com) in Seattle, Washington, ASA Puget Sound Chapter officer Jeremy Gu of Amazon spoke on behalf of the ASA about the role of statistics in data science. Daniela Witten of the University of Washington gave a talk titled, “Hard Problems; Easy Solutions,” while Tim Hesterberg of Google gave a talk titled “Statistics and Big Data at Google” and Robert Grossman of The University of Chicago gave a talk titled “An Introduction to AnalyticOps: Some Things You Should Know About the Differences Between Building and Deploying.”

At the Spring Data Science Conference in Chicago, the ASA was represented by Chicago Chapter President Joseph DeCosmo of Enova International and Sema Barlas of The University of Chicago. Grossman also spoke there about how to lower the cost of deploying analytics. The Data Science Conference will take place again in Chicago in the spring of 2017. ■

Academia Journal of Scientific Research Call for Papers

Academia Journal of Scientific Research (AJSR) is an open-access international journal covering the science and business of scientific research. The journal publishes articles in the field such as engineering, mathematics, and statistics.

All manuscripts are reviewed by the editorial board and qualified reviewers. Decisions are made as rapidly as possible, and the journal strives to return reviewers’ comments to authors within four weeks.

The editorial board will re-review manuscripts accepted pending revision. All accepted articles will be published online immediately after the proofreading and formatting process.

For more information or to submit a manuscript, visit www.academiapublishing.org/journals/ajsr/index.htm.

Consortium Introduces Training on Applied Data Analytics for Public Policy

Rayid Ghani, Frauke Kreuter, and Julia Lane



Rayid Ghani is director of the Center for Data Science and Public Policy, research director at the Computation Institute, and a senior fellow at the Harris School of Public Policy at The University of Chicago.

The University of Chicago, New York University, and University of Maryland are launching a short-term, five-session program targeted at government agency staff and policy evaluators and researchers. It is facilitated by Frauke Kreuter, Rayid Ghani, and Julia Lane—three of the editors of the new textbook *Big Data and Social Science: A Practical Guide to Methods and Tools*.

The program is designed to respond to the burgeoning interest in joining and using data sets across federal, state, and local agencies to enhance decision making. It features hands-on and collaborative work using agency microdata and teaches participants how to approach real social policy problems using real-world data and modern computational data analysis methods and tools. It also offers a unique opportunity to learn alongside and network with practitioners from other cities and states.

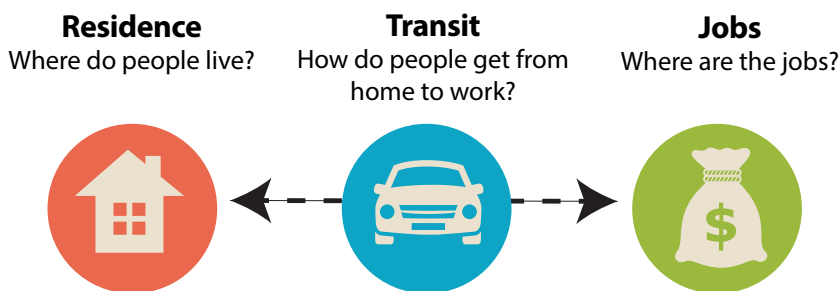
The classes will be structured around these linked data sets, which can be modified and expanded by class participants according to their interests. The data infrastructure will make use of new technology (JupyterHub). Specific examples and code will be provided in advance through the notebooks and companion book, so participants can work with developed code and have direct, replicable, and high-value interaction with the data and each other. Based on earlier experience, the result will also be that networks will be formed, new data assets will be created, and useful reports and analyses will be generated.

Facilitators are happy to work with managers of different agencies to identify additional evaluation topics and data sets of interest.

Scholarships are available for government agency staff. Applications can be accessed at dataanalytics.umd.edu.



Frauke Kreuter is a German sociologist and statistician who works as a professor and director of the Joint Program in Survey Methodology of the University of Maryland, College Park.



Participants learn how to scrape the web; use APIs; manage complex data; apply machine learning, text, and network analysis; and think about inference issues, privacy, and confidentiality.

The initial three cohorts will connect data on different groups of policy interest (i.e., ex-offenders, welfare recipients, and veterans) with their access to jobs. It does this by connecting the characteristics of the residence, public transportation options, and job availability and then examining outcomes of interest such as earnings, employment, recidivism, or return to welfare reciprocity.

The program builds on a successful set of pilot classes at the federal level that resulted in the establishment of a new initiative at the U.S. Census Bureau (the Innovation Measurement Initiative), as well as high-quality research from the Census Bureau staff participating in the activity (a research article in *Science* [<http://science.sciencemag.org/content/350/6266/1367>] and one in the *American Economic Review* [www.aeaweb.org/articles?id=10.1257/aer.p20161124]).

For information, visit www.applieddataanalytics.org or email dataanalytics@umd.edu. ■



Julia Lane is a senior managing economist at the American Institutes for Research; a professor of economics at BETA University of Strasbourg CNRS, Chercheur, Observatoire des Sciences et des Techniques, Paris; and a professor at Melbourne Institute of Applied Economics and Social Research, University of Melbourne.

Annual StatFest Encourages Students

Dionne Price Offers Keynote

Jesse L. Chittams, René H. Moore, and Nagambal Shah



Conference participants surround Adrian Coles, a statistical research scientist at Duke Clinical Research Institute, during StatFest.

On September 24, the ASA Committee on Minorities in Statistics (COM) held the 16th annual StatFest conference. StatFest is a one-day event aimed at encouraging undergraduate students from under-represented groups to consider graduate studies and careers in the statistical sciences.

In an effort to cover different geographic regions throughout the ASA community, StatFest moves around each year. This year, StatFest was hosted by Howard University in Washington, DC.

More than 100 participants attended: approximately 7% high-school students; 52% undergraduate students; 14% graduate students; and 27% professionals in academia, government, or industry.

The program started with a welcome and opening remarks from COM, Howard University's Bernard Mair, and ASA Executive Director Ron Wasserstein.

The keynote address was given by Dionne Price of the U.S. Food and Drug Administration. Through three panel discussions, participants were introduced to diverse statistics careers in government, industry and consulting, and academia.

The panelists in the academia session also shared information about their graduate programs and steps one should take to be a strong candidate for graduate school.

There was a student-only session titled "The Graduate Student Experience" that consisted of panelists who are enrolled in master's or doctorate programs in the statistical sciences. It was moderated by a recent PhD graduate. During the student-only session, faculty and professionals attended a parallel session in which both success stories and frustrations were shared in regard to attracting and retaining students and promoting diversity in the profession.

Other highlights included a poster session, with each poster presenter receiving a bag donated by SAS Institute; a networking challenge for which the winners received a T-shirt donated by the ASA; and having the founder of StatFest, Nagambal Shah, participate in the program.

Details about StatFest 2016, including the names and short biographies of panelists, can be found at <http://community.amstat.org/cmisevents/statfest>. ■

ASA LEADERS REMINISCE

Sally C. Morton

In the 20th installment of the Amstat News series of interviews with ASA presidents and executive directors, we feature a discussion with 2009 ASA President Sally Morton.



Morton

QYou have held several leadership roles during your career—at RAND, RTI International, the University of Pittsburgh, and now Virginia Tech. What are your views on statisticians in leadership?

AMy principle view is we need more! The ASA has been very active in providing training for statisticians interested in leadership, and I encourage individuals to partake of this training and other opportunities, including on-the-job training by serving in ASA positions.

Statisticians, especially those early in their career, should recognize that not all leadership is by position (e.g., a director of a group or chair of a department). Some leaders emerge during collaborative work, and statisticians are particularly well-suited and prepared to engage in this type of leadership naturally on team projects. Statistical training—for example, how to communicate with nonstatisticians, measure and evaluate, translate questions into statistical designs, and so on—is particularly helpful in such leadership roles. As a profession, we need to be proactive by encouraging and embracing these roles, as well as training the next generation of statisticians to be successful leaders. In this way, we can have the most impact on the world.

QAs dean at Virginia Tech, you lead a large college and maintain an active research agenda. How much time do

Sally C. Morton is dean of the College of Science and professor of statistics at Virginia Tech. She previously served as chair of biostatistics and directed the Comparative Effectiveness Research Center at the University of Pittsburgh. Before joining Pitt, Morton was vice president for statistics and epidemiology at RTI International. She began her career at the RAND Corporation and was head of RAND's Statistics Group.

Morton's research broadly concerns statistics in health policy; most recently, she has focused on evidence synthesis and patient-centered comparative effectiveness research (CER). CER answers the question, "What works best, for whom, and under what circumstances?" Morton is currently a member of the Patient-Centered Outcomes Research Institute Methodology Committee and Agency for Healthcare Research and Quality Evidence-Based Practice Center Program Methods Steering Committee. She also has served on several National Academy of Medicine committees, the Census Scientific Advisory Committee, and the National Academy of Sciences Committee on National Statistics.

Morton was president of the ASA in 2009 and chair of Section U (Statistics) of the American Association for the Advancement of Science (AAAS) in 2013. She is a fellow of both organizations. She holds a bachelor's degree in mathematical sciences, a master's degree in operations research, and a doctoral degree in statistics, all from Stanford University, as well as a master's degree in statistics from the London School of Economics.

your administrative duties leave for your research and work on statistics projects, and how do you guard the time you devote to research? What tips can you offer to someone who is taking on an administrative role and wants to remain active in research?

AI was excited to join Virginia Tech a few months ago, and I am still figuring out the optimal balance between administrative, research, and personal

responsibilities. As a dean, my focus is on my colleagues' careers, and not my own. That said, I do think leaders should be visible professionally and lead by example, and I enjoy being a statistician. Most of my statistical contributions at present are through service on national committees, with a little health policy project work on the side, as well.

I don't pretend to have the answer for how to balance responsibilities, but learning good



Sally Morton with Ingram Olkin at his 90th birthday party during JSM 2014 in Boston



Sally Morton with 2014 ASA President Nat Schenker

Photos courtesy of
Eric Sampson,
ASA Journals Manager

time management is essential. When I was chair of biostatistics at Pitt, I devoted one day a week to administrative meetings, and if a task could wait until then, it did. That said, when someone needs to see me, particularly a student or early-career faculty or staff member, I always try to make time. I keep my door open and welcome colleagues into my office whenever I can, and I also manage by walking around. I also try hard to delegate both responsibility and authority to others. Delegation requires not only allowing someone to do a task, but also giving credit. Often, the delegate does the task differently—and usually better—than you

might, so if you delegate, you need to be flexible and open to change. Time for one's personal life is also very important—being a mother, wife, grandmother, daughter, and sister is far more important to me than being a dean.

QWhat was the most interesting project you worked on during your time at the RAND Corporation?

AThe most interesting project I worked on at RAND involved the evaluation of the benefits and risks associated with ephedra, which is an herbal supplement usually used in the United States for weight loss or athletic performance—you can read about

it in an article we published in *Statistical Science* in 2005. We conducted a systematic review of the evidence, including an analysis of serious adverse events such as heart attacks and deaths contained in the U.S. Food and Drug Administration MedWatch database. This project was statistically complex, but it also presented a challenge in terms of communication, given the implication that ephedra had caused the deaths of high-profile athletes. Health and Human Services Secretary Tommy Thompson was quoted as saying, “I would not take this [ephedra]; I would not give it to my family. And I don’t know why anyone would take these products.” Suffice to say, there was considerable media attention on our analysis.

One lesson I learned was to anticipate the political and publicity spin a project might produce. Particularly in this time of Big Data, evidence-based policy requires big statistics. By big statistics, I mean statisticians need to be involved early in the process of design and data collection; communicate with other scientists, policymakers, and journalists; and acknowledge politics as part of the mix.

QYou have served on multiple Institute of Medicine (IOM; now the National Academy of Medicine) committees. What types of issues have been addressed by these committees?

AThe topics of these committees have all concerned health policy, and I was fortunate to be asked to participate due to my experience in evidence synthesis, particularly the science of systematic reviews and meta-analysis. The first committee focused on how to identify highly effective clinical health care services and led into a second committee, which identified initial national priorities for comparative

effectiveness research. Both committee reports informed the health care Obamacare reform debate. Subsequently, I was vice chair of a committee that established methodological standards for systematic reviews and then served as a member of a committee examining geographic variation in health care spending.

I am just beginning service on a committee considering the process for updating the national dietary guidelines, including how the guidelines advisory group is selected and how systematic reviews are conducted. I enjoy contributing in this way—I always learn a tremendous amount and feel I am able to have an impact as a statistician.

QWhat was the most unique challenge you faced during your term as president of the ASA?

ABefore turning to challenges, I wish to cite advantages! I was the first ASA president to have two major advantages—an updated strategic plan and Ron Wasserstein.

The ASA strategic plan (<http://bit.ly/2eKTYi5>) had been revised to succinctly focus on key dimensions of the ASA such as Meetings and Visibility and Impact in Policy Making and provide a background, objective, and strategy for each dimension. I was able to organize my presidential initiatives around the plan, and the ASA Board activities were aligned with the plan, as well. I believe this plan is a major asset for the ASA, and I still use it to explain to fellow ASA members how the association is moving forward.

My second advantage was that Ron Wasserstein began his term as executive director of the ASA just as I was elected, and I feel very fortunate to have worked with—and learned from—him and the other excellent staff of the ASA. I am very fortunate to

have worked alongside Ron, as well as numerous fellow presidents and members of the ASA.

I would identify two challenges I faced as ASA president. The first was helping the ASA move forward on accreditation. This issue had been fairly contentious in the past, and it was important to hear all views. In the end, the association relied on data. A survey of the members indicated this service would benefit a sector of our association. We strove to have an open and transparent process for assessing accreditation, and in the end, the ASA Board approved an accreditation program. The ASA is a heterogeneous and large group, and we need to value and bring services to members across the spectrum.

My second challenge was related philosophically to the first—the establishment of the Conference on Statistical Practice, or CSP, which serves



Sally Morton with 2010 ASA President Sastry Pantula

primarily applied statisticians in industry. CSP has been tremendously successful and provides an excellent additional professional outlet to ASA members.

I am honored to have served as ASA president, and I am incredibly positive about our future as an association and discipline. Thank you. ■

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2017 Internships

More than 30 companies are looking for interns for 2017. In fact, there are so many that the list is too long to print. Instead, we included the full descriptions for all internships on STATtr@k at <http://stattrak.amstat.org>.

You'll see from this list that there is something for everyone, from positions at pharmaceutical companies to a summer spent studying social issues that affect integrated human habitat, health, and well-being. If you are interested in improving your programming techniques, making connections, or honing your data analysis skills, apply for one of these opportunities.

AbbVie

Lake County, North Chicago, Illinois

Number of Positions: Multiple

Type of Student: Graduate/3rd or 4th year into PhD program

Deadline: January 31, 2017

We participate in several on-campus events (e.g., information sessions, career fairs, and interviewing while on campus). Interested candidates should check the career services schedules at their schools for the recruiting event schedule. AbbVie also posts our science intern positions on our career website. If your school isn't listed, please visit www.abbviecareers.com.

Allergan Pharmaceuticals

Jersey City, New Jersey; Bridgewater, New Jersey; Irvine, California

Number of Positions: 4-6

Type of Student: PhD

The department of statistical sciences at Allergan is looking for PhD candidates in statistical sciences or a closely related discipline with a solid theoretical statistics background; an understanding of fundamental principles of probability, statistics, and computing; familiarity with software such as R, WinBugs, C/C++, Splus, or SAS; effective oral and written communication skills in English; and enthusiasm for statistical sciences applied in a biopharmaceutical setting.

Contact: Visit www.Allergan.com to submit your résumé.

Astellas Pharma Inc.

Northbrook, Illinois

Number of Positions: 1-2

Type of Student: PhD candidate in statistics or related discipline

Deadline: January 31, 2017

To be considered, applicants must have completed at least two years of graduate-level course work and be working on a dissertation toward a PhD in statistics or biostatistics. The applicant must be legally authorized to work in the United States. In addition, applicants should have a good working knowledge of R, S-Plus, or SAS and good communication skills.

Contact: Send CV, personal statement of interest, and a letter of recommendation to Biostat.Intern@Astellas.com; (847) 205-5201.

AT&T Labs – Big Data Research

Bedminster, New Jersey; New York, New York

Number of Positions: 2-5

Type of Student: Graduate, typically 2+ year PhD student

Deadline: March 1, 2017

Qualified applicants will be pursuing a graduate degree (PhD preferred) in a data science field; be an accomplished R programmer with experience coding with languages such as C/C++, Python, and Java; have familiarity with modern data management systems like Hadoop, NoSQL, and Spark; have experience

summarizing and communicating research results; and have completed at least two years of graduate study and demonstrated the ability to successfully tackle challenging analytical problems.

Contact: Amy Messina, (484) 636-5821; amy.messina@att.com

Battelle

Columbus, Ohio

Number of Positions: 1-2

Type of Student: Master's and PhD

Deadline: January 31, 2017

Selected candidates will be pursuing a master's or PhD in statistics, biostatistics, applied mathematics, or related field; have a 3.0 minimum GPA and at least two years of college coursework completed; have strong course work in statistical theory; have course work or experience demonstrating statistical programming and data visualization skills in SAS or R; have demonstrated competency in multiple statistical techniques; have strong aptitude in science and a firm understanding of the scientific method to facilitate collaboration with scientists and engineers; and have excellent written and oral communication skills.

Contact: Kristin Rager, (614) 424-3938; ragerk@battelle.org

Bayer Pharmaceuticals

Whippany, New Jersey

Number of Positions: 3

Type of Student: PhD candidates in (bio)statistics or related field

Deadline: January 15, 2017

Successful candidates must be high performers interested in the interactions between science and policy, wanting to work with dynamic people and contribute to a changing environment.

They must have good oral and written communication skills and working knowledge of SAS and/or R. To apply, visit www.career.bayer.us/en and search for clinical statistics intern.

MORE ONLINE
Find full descriptions for these internships on STATtr@k at <http://stattrak.amstat.org>.

Contact: Daniel Haverstock, 100 Bayer Boulevard, P.O. Box 915, Whippany, NJ 07981-0915; (862) 404-3283; daniel.haverstock@bayer.com

Boehringer Ingelheim

Ridgefield, Connecticut

Number of Positions: Up to 5

Type of Student: MS or PhD in biostatistics, statistics, or a related degree program

Deadline: January 30, 2017

Applicants must be graduate students in fields related to statistics, biostatistics, or mathematics with good academic standing (cumulative GPA must be at least 3.0); have completed 12 credit hours within a related major and/or other related course work; be an MS or PhD candidate with at least two years of study; have good written and oral communications skills; and have demonstrated proficiency in conducting statistical analyses using SAS or R. Interested applicants visit <http://bit.ly/1icpp43>, click “careers,” and search for job number 1611229 to apply.

Contact: Jennifer McGinniss, 900 Ridgebury Road, Ridgefield, CT 06877; (203) 791-6476; jennifer.mcinniss@boehringer-ingelheim.com

Bristol-Myers Squibb

Princeton, New Jersey; Hopewell, New Jersey; Wallingford, Connecticut

Number of Positions: Multiple

Type of Student: PhD candidates in statistics or biostatistics

Deadline: May 2016

To be considered, you must have completed at least two years of course work and be working on your dissertation toward a PhD in statistics or biostatistics. Successful candidates must have effective oral and written communication skills and good working knowledge of SAS and/or R. To apply, send unofficial graduate transcripts, a résumé, and a cover letter to the contact listed.

Contact: Rose Elcsics, P.O. Box 5100, Wallingford, CT 06492-7660; rose.elcsics@bms.com

Bureau of Labor Statistics

Washington, DC

Number of Positions: TBD

Type of Student: PhD

Deadline: January 2, 2017

If you are a graduate student who is working closely with a professor on a research topic of interest to the BLS in the fields of statistics, mathematics, economics, survey methodology, behavioral science, etc., then the professor can submit a research proposal to the ASA/NSF/BLS Fellowship Program, including a budget item for student support. More is available at <http://bit.ly/2eL9wm1>.

Contact: Jeffrey M. Gonzalez, 2 Massachusetts Ave. NE, Suite 5930, Washington, DC 20212; (202) 691-7517; (202) 691-7426 (fax); gonzalez.jeffrey@bls.gov

Center for Drug Evaluation and Research, Office of Biostatistics, Food and Drug Administration

Silver Spring, Maryland

Number of Positions: Multiple

Type of Student: Graduate students in statistics or biostatistics. Completion of doctoral prequalifying exams is preferred.

Deadline: March 31, 2017, with rolling offers

You will be expected to participate in the internship 40 hours per week at our headquarters in Silver Spring, Maryland, with your mentor and cohort. You are expected to have excellent oral and written communication skills, interpersonal and teamwork skills, strong problem-solving skills, strong computational skills, creativity and innovation, and self-management skills. Candidates should have proficiency with MS Office and programming experience with SAS and/or R.

Have an Internship?

If your organization would like to include an internship opportunity on our website, complete the form online at www.amstat.org/ASA/Education/Internships-and-Fellowships.aspx. Interested students will send a letter of inquiry and résumé directly to the contact and location you list.

Contact: Send CV and cover letter to CDER-OTS-Biostatistics-Recruitment@fda.hhs.gov with Application Orise 2017 in the subject line by March 31, 2017. If you have a question, use Question Orise 2017 as the subject.

Chevron Oronite Company, LLC

Richmond, California

Number of Positions: 1

Type of Student: Pursuing a master's or PhD degree in statistics or a closely related field

Deadline: January 31, 2017

The successful candidate will be pursuing a master's or PhD degree in statistics or a closely related field; have experience using statistical software (SAS, JMP, and/or R) and business communication software (i.e., Microsoft Office); and have good writing skills and a willingness to give verbal presentations.

To be considered for this position at Chevron, you must complete a profile and application at <http://bit.ly/2g3xSN4>. Upload your transcript under the “Additional Documents” field in the profile. To verify your application has been submitted, click on the Job Management tab.

Contact: Tarin Payne, 6001 Bollinger Canyon Road, T-1208, San Ramon, CA 94583; (925) 842-5478; tpgm@chevron.com

Eli Lilly and Company

Indianapolis, Indiana

Number of Positions: Multiple

Type of Student: Master's or PhD students enrolled in a statistics

or biostatistics program. PhD students are required to have completed at least three years of graduate work by May 2017. Master's students must be U.S. authorized workers who have completed at least one year of graduate work by May 2017.

Deadline: January 31, 2017

Preferred skills for candidates include demonstrated leadership and ability to influence; excellent communication, teamwork, and interpersonal skills; strong problem solving skills; strong computational skills; creativity and innovation; and self-management skills.

PhD students, please apply at <http://bit.ly/2f0HtA9>.

Master's students, please apply at <http://bit.ly/2ffjLrI>.

Contact: Sheri Shaw, *sheri.shaw@lilly.com*

The Emmes Corporation

Rockville, Maryland

Number of Positions: 3–5

Type of Student: MS or PhD in biostatistics

Deadline: May 1, 2017

The primary responsibilities of interns are to perform descriptive and inferential statistical analysis, summarize results using tables and graphs for presentation to biomedical investigators or for manuscript prep, and edit and finalize research databases for statistical analysis.

For consideration, submit your résumé and apply directly through the company website.

Contact: Charlotte Camacho, (301) 251-1161; (301) 576-7114 (fax); *ccamacho@emmes.com*

Division of Biostatistics, OSB, CDRH, FDA

Silver Spring, Maryland

Number of Positions: 3–5

Type of Student: Advanced PhD students

Deadline: April 30, 2017

Interns will gain hands-on experience on regulatory research

projects under expert Division of Biostatistics mentors. Preference will be given to senior doctoral candidates with a strong background in statistical methods and good computational and programming skills.

Contact: Send CV and cover letter to Ram Tiwari at *ram.tiwari@fda.hhs.gov*; (301) 796-4084

Fred Hutchinson Cancer Research Center

Seattle, Washington

Number of Positions: ~30

Type of Student: Undergraduate—entering summer before final semester/quarter of undergraduate studies

Deadline: January 13, 2017

Interns must be U.S. citizens or permanent residents, be entering the summer before the final year (or semester or quarter) of undergraduate studies, and have a strong background in the sciences or related area of interest.

Contact: Jennifer Anderson, 1100 Fairview Ave. North, M3-B232, Seattle, WA 98109; *SURP@fredhutch.org*

Genentech

South San Francisco, California

Number of Positions: 4–6

Type of Student: PhD in statistics, biostatistics, or related field

Deadline: January 29, 2017, but offers may be made earlier

Applicants must be at least 18 and pursuing a PhD in statistics or biostatistics. They must have at least one year of graduate work by May 2016 and be returning to school in the fall of 2016. The applicant must be legally authorized to work in the United States. In addition, applicants should have a good working knowledge of R, S-Plus, or SAS and good communication skills.

Contact: Send CV, personal statement of interest, and a letter of recommendation to *gnebiostatsummerintern@gene.com*.

GlaxoSmithKline

Collegeville, Pennsylvania

Number of Positions: 2

Type of Student: MS or PhD student

Deadline: November 30 for January hiring, May 31 for June hiring

This position is full time for five to six months. It will be posted online and managed by third party Atrium. There are two hiring windows every year. The position from January–June is posted in early October and the position from June–December is posted in late March.

To apply, visit <http://bit.ly/2eTj922> for position ID 201079.

GlaxoSmithKline - Pre-Clinical Statistics for Drug Discovery

Collegeville, Pennsylvania

Number of Positions: Multiple

Type of Student: PhD student

Deadline: May 31, 2017, for position starting in June/July 2017

GSK is looking for an intern who is currently enrolled in a graduate program leading to a PhD in statistics, biostatistics, or a related field; eligible to work in the U.S. at the time of, and for the duration of, employment; eligible to work on a full-time basis during the internship duration (35–40 hours/week); and has completed two years of graduate study (i.e., coursework equivalent to an MA/MS in statistics with a 3.0 or greater cumulative GPA).

To apply, submit a résumé, a transcript, the email addresses of two references, and a cover letter explaining your interest in the position to the GSK contact below.

Contact: Shu Zhang, Target Sciences Statistics, GSK, 1250 S. Collegeville Road, Collegeville, PA 19426; *shu.x.zhang@gsk.com*

Google

Several locations in North America

Number of Positions: Multiple

Type of Student: MS or PhD

enrolled in a full-time degree program with plans to return to the program after the end of the internship

Deadline: We will begin accepting applications on January 6, 2017. Applications are due by Monday, January 23, 2017, at 11:59 p.m. PST. Our team will review applications on a rolling basis so it's in the candidate's best interest to apply early. All hiring will be completed by April 2017.

Successful candidates will be pursuing an MS or PhD in statistics, biostatistics, computer science, mathematics, economics, psychology, sociology, physics, operations research, electrical engineering, or another discipline involving experimental design and quantitative analysis of experimental data; be enrolled in a full-time degree program and returning to the program after the end of the internship; and have experience using tools such as scripting, R, Python, or SQL to work with data.

Contact: google.com/students

Institute for Defense Analyses

Alexandria, Virginia (Washington, DC, Metro Area)

Number of Positions: 5

Type of Student: Graduate and PhD

Deadline: January 7, 2017

The Institute for Defense Analyses is seeking applicants with statistical expertise. U.S. citizenship is required; applicants selected will be subject to a security investigation and must meet the eligibility requirements to work in a classified facility.

Visit www.ida.org for more information. To apply, go to <http://bit.ly/2fr0E99>

Contact: Lamarr Colvin, 4850 Mark Center Drive, Alexandria, VA 22311; (703) 845-2091; lcolvin@ida.org

Institute for Defense Analyses

Washington, DC

Type of Student: Bachelor's and Master's

Deadline: January 27, 2017

Successful candidates will have a bachelor's (conferred between May 2015 and July 2017) or master's degree in engineering, life sciences, physical sciences, social and behavioral sciences, computer science, mathematical sciences or statistics, and learning sciences; have a strong interest in science and technology policy; have strong written and oral communication skills; be innovative, analytical, self-starting, and able to contribute to and support team efforts; and be a U.S. citizen who meets the eligibility requirements for access to classified information.

To be considered, apply at <http://bit.ly/2eXEsTs> and submit the following documents to STPI-Fellow@ida.org:

Statement of purpose—explain in 1,000 or fewer words why you want to work in science and technology policy and how your background/experience makes you a good candidate

Writing sample—5,000-word maximum

Transcripts—unofficial transcript is acceptable for consideration, but an official transcript is needed before any offer of employment will be made

Two letters of academic recommendation—letters must be signed by the individual rendering the reference and delivered as PDF files. Letters can also be sent directly to STPI-Fellow@ida.org by the recommender.

Joint Program in Survey Methodology: Junior Fellows Program

Washington, DC

Number of Positions: 20

Type of Student: Rising college junior or senior in the 2017/2018 school year

Deadline: January 9, 2017

Junior fellows will be placed at one of the federal statistical agencies and expected to work 40 hours a week (May 30, 2017 – August 4, 2017) on tasks associated with the development, deployment, and analysis of surveys. Fellows will also attend weekly seminars and visit other federal statistical agencies. Finally, fellows will meet graduate faculty of the Joint Program in Survey Methodology and technical leaders in the industry who will answer questions they may have about advanced education and career paths.

Contact: Junior Fellows Management Team, <https://jpsm.umd.edu/landing/Undergraduate:jpsmjuniorfellows@umd.edu>

The Lubrizol Corporation

Suburb of Cleveland, Ohio

Number of Positions: 2

Type of Student: BS, MS, PhD

Deadline: February 10, 2017

Current needs and possible areas of involvement include performing data manipulation and analysis, assisting with consulting tasks, performing method assessment and development, and carrying out statistical and/or web services programming.

There are two opportunities: The Statistics & Data Analytics Internship is for MS/PhD students with good statistical and computing skills, whereas the Data Analytics Internship is for BS/MS students with excellent computing skills.

Contact: To apply, go to www.lubrizol.jobs and search for “data analytics.” Brittany Folino, (440) 347-5359; Brittany.Folino@Lubrizol.com

Mayo Clinic

Rochester, Minnesota

Number of Positions: 10–12

Type of Student: Undergraduate, Graduate, PhD

Deadline: January 13, 2017

Interns will work with statisticians, bioinformaticists, and

clinical investigators on research projects in areas such as clinical trials, statistical genetics, and bioinformatics. Experience with SAS and/or R is preferred.

To apply, submit an unofficial transcript, résumé, and cover letter at <http://mayocl.in/1qex3AX>. Search “Biostats” (statistical internship) or “Intern-IS” (informatics internship) and our current openings will be available. For more information, visit <http://mayocl.in/2gauDDE>. To learn more about the Mayo Clinic, visit www.mayoclinic.org.

Contact: Bud Harris, 200 First St. SW, Rochester, MN 55905; (480) 342-3493; (507) 284-1445 (fax); Harris.Bud@mayo.edu.

Mental Health in the Country of Ukraine

Kiev, Ukraine (2 weeks); Sioux Center, Iowa (8 weeks)

Number of Positions: 9

Type of Student: Undergraduate

Deadline: January 31, 2017

Undergraduate students with an interest in applying complex survey sampling techniques to the analysis of population-based psychological/mental health data from the Ukraine are encouraged to apply to this international research program. Successful applicants will work with a team of undergraduate students on interdisciplinary research projects investigating a variety of research questions about this developing country, leading to publication in peer-reviewed journals and presentations at regional and national conferences. Visit <http://bit.ly/2gavnZa> for more information and to apply.

Contact: Nathan Tintle, Dordt College, 498 4th Ave. NE, Sioux Center, IA 51250; (712) 722-6264; nathan.tintle@dordt.edu

Merck Research Laboratories

Suburban Philadelphia, Pennsylvania; Rahway, New Jersey; Kenilworth, New Jersey

Number of Positions:

Approximately 10

Type of Student: Graduate

Deadline: Rolling Deadline

The biostatistics and research decision sciences (BARDS) department has approximately 10 internships (~9–12 weeks) in preclinical biostatistics and clinical biostatistics for full-time students pursuing an MS or PhD in statistics or biostatistics. In these internships, you will work closely with an experienced pharmaceutical industry statistician to perform statistical analysis of data from statistical research related to basic drug research, clinical pharmacology, drug and vaccine development, or pharmacogenomics.

To be considered for these internship positions, please visit www.merck.com/careers to create a profile and submit your résumé for the biostatistics internship. Résumés will not be accepted via email.

National Agricultural Statistics Service/USDA

Washington, DC

Number of Positions: Multiple

Type of Student: Graduate Student (PhD preferred)

Deadline: March 31, 2017, but offers may be made earlier

Preference will be given to candidates having an interest in a future career with NASS. Applicants must be U.S. citizens. NASS is interested in hiring geospatial analysts, mathematical statisticians, statistical programmers, and survey methodologists for positions in both research and operational environments.

Contact: Linda Young, Room 6035, 1400 Independence Ave., SW, Washington, DC 20250-2040; (202) 690-1401; Linda.Young@nass.usda.gov

National Cancer Institute

Rockville, Maryland

Number of Positions: 2

Type of Student: Flexible

Deadline: Three months before you want to start

This is an unpaid internship. To compensate, we try to make the experience as educational and rewarding as possible. There is no clerical work. Rather, the intern engages in high-level methodological research in areas of substantial importance in the design and analysis of randomized clinical trials. Recently, we have focused mostly (but not exclusively) on the nexus among randomization methods, allocation concealment, and selection bias.

Contact: Vance Berger, (240) 276-7142; vb78c@nih.gov; vance917@gmail.com

Novartis

East Hanover, New Jersey; Cambridge, Massachusetts

Number of Positions: Multiple

Type of Student: Graduate, PhD

Deadline: January 31, 2017

Candidates must be enrolled in a graduate-level program working toward a PhD in biostatistics, statistics, or a related discipline and have completed at least 1.5 years of course work. Competitive candidates will have excellent oral and written communication skills and strong problem-solving skills. Working knowledge of SAS is preferred, and some projects require a strong background in R and/or other statistical software.

Contact: Sandra Bedoya, 1 Health Plaza, East Hanover, NJ 07936; biostatistics.summerinternships@novartis.com

Pfizer Inc.

La Jolla, California; Groton, Connecticut; Colleagueville, Pennsylvania; Cambridge, Massachusetts; New York, New York; Andover, Massachusetts; Pearl River, New York

Number of Positions: 15

Type of Student: Graduate student in statistics, biostatistics, or related field

Deadline: February 24, 2017

The intern's project will be biopharmaceutically oriented, with one-on-one supervision by a senior staff statistician. The work will be a hands-on learning experience focusing on current project needs and will likely involve use of SAS, R, or other statistical software. As part of the internship program, the intern will prepare a written report and brief presentation summarizing the work and forming a permanent record of the intern's efforts.

Contact: Xun Lin, Pfizer Inc., 10555 Science Center Drive, CB10-002/2207, San Diego, CA 92121; xun.lin@pfizer.com

Sanofi US Inc.

Bridgewater, New Jersey

Number of Positions: Multiple

Type of Student: PhD candidates in statistics or biostatistics

Deadline: February 5, 2017

Successful candidates will work on design and analysis of early- and late-phase clinical trials as well as statistical research for design and analysis methods of clinical trial data under the supervision of senior-level statisticians. Successful candidates must have completed at least two years of graduate course work and be working on the dissertation toward a PhD in statistics or biostatistics. They also must have effective oral and written communication skills and good knowledge of SAS and/or R.

To apply, email a résumé and unofficial graduate transcript to the contact listed.

Contact: Myrna Roberts, 55 Corporate Drive, Bridgewater NJ 08807; (908) 981-6045; Myrna.Roberts@sanofi.com

SAS Institute Inc.

Cary, North Carolina

Number of Positions: 2

Type of Student: PhD students studying in the United States who have completed at least two years of graduate work by the end of the spring semester 2017

Deadline: January 13, 2017

Eligible candidates must have completed at least two years of graduate work by the end of the spring semester of 2017 and have demonstrated experience in statistical computing beyond the routine classroom use of statistical packages. We are particularly interested in candidates with research experience in computational aspects of one of the following areas: Bayesian modeling, causal inference methods, complex survey methods, joint modeling, latent variable models, missing data methods, nonlinear mixed models, sparse methods for high-dimensional modeling, structural equations modeling, or survival analysis.

You may apply to and view all SAS fellowship opportunities at sas.com/summerfellowships. In addition, you must ensure that two faculty members from your graduate program send a letter of recommendation via PDF to SASFellows@sas.com by January 13, 2017.

Contact: SASFellows@sas.com

Social and Decision Analytics Laboratory, Virginia Biocomplexity Institute of Virginia Tech

Arlington, Virginia

Number of Positions: 4+

Type of Student: Undergraduate, Graduate, PhD

Deadline: February 1, 2017

Students will work on vertically

integrated teams with post-docs; research staff; and local, state, and federal agency leadership to undertake interdisciplinary research that embraces today's data revolution. They will conduct research to develop evidence-based quantitative methods that inform science and technology policy.

To be considered for a 2017 summer internship appointment, please apply online at www.bi.vt.edu/sdall/careers/call-for-students. The online application will request a résumé, cover letter stating why this internship is of interest to you, two reference letters, and answers to a few questions.

Contact: Stephanie Shipp, 900 North Glebe Road, Arlington, VA 22203; (571) 858-3123 or 540-808-5226 (mobile); steph19@vbi.vt.edu

StataCorp LP

College Station, Texas

Number of Positions: 1

Type of Student: Graduate student in biostatistics or a closely related field

Deadline: January 15, 2017

Candidates must be enrolled in a graduate program in biostatistics or a related quantitative field, have good technical writing skills, and be able to communicate effectively in English. A strong mathematical background and experience programming in Stata, other statistical languages, C/C++, and Java is desirable.

Apply at <http://bit.ly/2eXLCXT>. StataCorp LP is an affirmative action employer—minorities/females/veterans/disability.

StataCorp LP

College Station, Texas

Number of Positions: 1

Type of Student: Graduate student in economics, econometrics, finance, or a closely related field

Deadline: January 15, 2017

Candidates must be enrolled in

a graduate program in economics, econometrics, finance, or a related quantitative field; have good technical writing skills; and be able to communicate effectively in English. A strong mathematical background and experience programming in Stata, other statistical languages, C/C++, and Java are desirable.

Apply at <http://bit.ly/2eXLCXT>. StataCorp LP is an affirmative action employer—minorities/females/veterans/disability.

StataCorp LP

College Station, Texas

Number of Positions: 1

Type of Student: Graduate student in statistics or a closely related field

Deadline: January 15, 2017

Candidates must be enrolled in a graduate program in statistics or a related quantitative field, have good technical writing skills, and be able to effectively communicate in English. A strong mathematical background and experience programming in Stata, other statistical languages, C/C++, and Java is desirable.

Apply at <http://bit.ly/2eXLCXT>. StataCorp LP is an affirmative action employer—minorities/females/veterans/disability.

Summer Institute in Biostatistics (SIBS)

Atlanta, Georgia; Boston, Massachusetts; Denver, Colorado; Iowa City, Iowa; Minneapolis, Minnesota; Raleigh/Durham, North Carolina

Number of Positions: Up to 25 at each site

Type of Student: Undergraduates majoring in mathematics, statistics, biology, or another science who have an interest in quantitative methods. Those who already have a baccalaureate degree are also eligible to apply, but priority will be given to undergraduates at the time of application. U.S. citizenship or permanent resident status is required.

Deadline: Early March 2017 or as specified by individual sites

The program will be offered at six sites in the summer of 2016. Although each program will be different, all will be focused on providing participants with an intensive introduction to biostatistical principles and methodologies and the essential role of biostatistics in health sciences research, including biomedical Big Data. Participants will enjoy instruction and lectures by recognized experts in the field; meet practicing biostatisticians, epidemiologists, and statistical geneticist and genomicists; and gain real-world experience working with data from internationally recognized studies.

Applications should be made to each program site separately; there is no restriction on to how many programs a student may apply.

Contact:

NHLBI SIBS
<http://bit.ly/1ewS2Sz>

Boston University
<http://sph.bu.edu/sibs>

NC State University - Duke University
www.stat.ncsu.edu/sibs

University of Iowa
www.public-health.uiowa.edu/isib

University of Colorado-Denver
www.ucdenver.edu/biostatistics
cosibs

University of Minnesota
www.sph.umn.edu/academics/institutes/sibs

Emory University
<http://sph.emory.edu/departments/bios/sibs/index.html>

Takeda Pharmaceutical Company Limited

Cambridge, Massachusetts

Number of Positions: 5–10

Type of Student: PhD

Deadline: April 1, 2017

Candidates must be enrolled in a PhD statistics program (which includes biostatistics, bioinformatics, and mathematics programs

with an emphasis on statistics). Candidate PhD students must have passed qualification exams. Three years or more of training post-bachelor's degree is preferred. At the end of the internship program, interns will give a presentation summarizing their work

Contact: Intern Coordinator, (617)374-7754; biostatistics.intern2@takeda.com

Undergraduate Research Program in Statistical Genetics

Sioux Center, Iowa

Number of Positions: 5–6

Type of Student: Undergraduate

Deadline: January 31, 2017

Successful applicants will work with a team of other undergraduate students on cutting-edge problems in statistical genetics leading to publication in peer-reviewed journals and presentations at regional and national conferences. Visit the statistical genetics website at www.dordt.edu/statgen for more information, a link to this year's project descriptions, and an application.

Contact: Nathan Tintle, Dordt College, 498 4th Ave. NE, Sioux Center, IA 51250; (712) 722-6264; statgen@dordt.edu

University of Arkansas for Medical Sciences/Arkansas Children's Hospital—Department of Pediatrics

Little Rock, Arkansas

Number of Positions: 1–2

Type of Student: Graduate

Deadline: January 30, 2017

Candidates must be enrolled in a graduate program at an accredited institution leading to a master's or a PhD in statistics or biostatistics. Candidates must have had a minimum of two full semesters of graduate-level statistics courses or equivalent prior to starting their summer internship and must be returning to school in the fall of 2017. Candidates must have a strong statistical/methodological

background, strong analytical skills, the ability to work under minimum supervision, the ability to work on a team, and excellent communication skills. Previous research experience is highly valuable, but not required. Experience with SAS/R/STAT is highly preferred.

To apply, send an undergraduate and graduate transcript (request for undergraduate transcripts may be waived for international students only), résumé, and cover letter to the contact below. For information about the department of pediatrics, visit www.arpediatrics.org.

Contact: Amber Sharp, 1 Children's Way, Slot 512-43, Little Rock, AR 72202; (501) 364-6631; achbiostat@uams.edu

U.S. Census Bureau

Suitland, Maryland

Number of Positions: Multiple

Type of Student: Current students in an accredited high school; college (including four-year colleges/universities, community colleges, and junior colleges); professional, technical, vocational, and trade schools; advanced degree programs; or other qualifying educational institution pursuing a qualifying degree or certificate

Deadline: January 2017

Interns may be converted to a permanent position within 120 days of successful completion of the program.

To be eligible for conversion, interns must do the following:

Complete at least 640 hours of work experience acquired through the internship program

Complete their degree or certificate requirements

Meet the qualification standards for the position to which the intern will be converted

Meet agency-specific requirements as specified in the participant's agreement

Perform their job successfully

Contact: Pathways Program Coordinator, Human Resources

Division; (301) 763-4910; tiffany.s.tayman@census.gov

USDA/Economic Research Service (ERS)

Washington, DC

Number of Positions: 20–25 (summer internship only—not to exceed September 30, 2017)

Type of Student: Economics - Undergraduate, Master's, and PhD; Information Specialist - Undergraduate and Master's

Deadline: First or second week in February, date to be determined. It will be opened for two weeks once commenced.

Economics

These positions require individuals with a foundation in economic theory and quantitative skills; experience with data collection, econometric analysis, data base management, and/or mathematical programming and models; and good communications skills.

Information Specialist

The student will focus on installing and configuring the agency's operating system; software installation and updates; troubleshooting Adobe web development programs, Office 2007 software suite, computer systems, and software programs. Other information specialist positions may focus on GIS creation and execution.

These positions are for the summer only. The student can start in May and work until September 30, 2017. Jobs are announced via USAJobs.com only. Résumés and transcripts cannot be sent directly to the agency. The application period is two weeks once opened.

Vermont EPSCoR

Burlington, Vermont

Type of Student: PhD

Deadline: The position will begin on June 1, 2017, and applications will be considered until the position is filled.

We are seeking a PhD-level graduate research assistant who will be responsible for i) statistical modeling of climate change projections in support of downstream models and ii) using these climate change projections to simulate forest dynamics in our New England study region. This GRA will require or develop technical expertise in R/Python, Bayesian statistics, and running simulations models in a Linux-based high-performance computing environment. It is expected that the successful applicant will have an undergraduate or master's degree in a quantitative or computational field.

To apply, send a CV; names and contact information for three references; and a cover letter outlining research interests, expertise, and availability to epscor@uvm.edu and reference Position ID GRA#008.

Contact: Arne Bombliès, Arne.Bombliès@uvm.edu

Westat

Rockville, Maryland

Number of Positions: 2

Type of Student: Graduate

Deadline: March 31, 2017

Survey Sampling Summer Internship

Candidates must hold a bachelor's degree in statistics or a similar quantitative technical field of study. Candidates must be enrolled in a master's or PhD program in statistics with coursework in survey sampling or a master's or PhD program in survey sampling.

Survey Methodology Summer Internship

Candidates must hold a bachelor's degree in math, statistics, quantitative sociology, psychology, or related field of study. Candidates must also be enrolled in a master's or PhD program in survey methodology.

Contact: Recruit@westat.com ■

MORE ONLINE
Additional internships will be posted as received at www.amstat.org/ASA/Education/Internships-and-Fellowships.aspx.

STATtr@k

Effective Research-Oriented Internships to Foster the Next Generation of Statisticians

A JSM Session Sponsored by the ASA SPAIG Committee

William Mietlowski, John E. Kolassa, Vladimir Geneus, Aiyi Liu, Wei Shen (Session Discussant), Ching-Ray Yu (Guest Discussant), and Kelly H. Zou (Session Organizer and Chair)

Editor's Note

The views expressed in this article are the presenters' own, and do not necessarily represent the views of their respective employers.

According to Merriam-Webster, the origin and etymology of “intern” comes from the middle French word *interne*, as well as from Latin *internus*. It has been known since approximately 1500 AD. Recently, more and more students seek internships, and thus, preparing for such opportunities becomes more common.

During a session at the 2016 Joint Statistical Meetings (JSM) in Chicago, Illinois, the ASA—through the Committee on Statistical Partnerships among Academe, Industry, and Government (SPAIG)—showcased a few projects derived from statistical internships across sectors. These projects represent partnerships with a focus on internships, which were established across sectors. Successful partnerships come in many forms, and in particular, statistical internships support the mission of collaboration, enhance both methodological and applied research, and may ultimately be stepping stones to fulfilling careers for a future generation of statisticians.

The four session presenters were William Mietlowski of Novartis Pharmaceutical Corporation, John E. Kolassa of Rutgers University, William Vladimir Geneus of Florida State University, and Aiyi Liu of the National Institutes of Health. Their presentations were elaborated upon by discussant Wei Shen of Eli Lilly and Company and guest discussant Ching-Ray Yu of Pfizer Inc. Kelly H. Zou of Pfizer Inc. and chair of the SPAIG Committee served as the session organizer and chair.

These statisticians from various professional sectors offered valuable thoughts and advice on how young statisticians, especially current graduate students and even undergraduate students, may seek and reap the benefits of internships via vital collaborations across sectors.

Below were a few questions raised and responses provided in the session. There are several examples of institutional collaborations between industry and academia or industry and the U.S. government.

Some have resulted in the SPAIG award to recognize outstanding statistical partnerships.

Could the ASA help foster internship opportunities?

The ASA encourages undergraduate-level internships via its curriculum guidance (www.amstat.org/asa/education/Curriculum-Guidelines-for-Undergraduate-Programs-in-Statistical-Science.aspx) and a white paper (<http://magazine.amstat.org/wp-content/uploads/2013an/masterworkgroup.pdf>). The ASA Workgroup on Master's Degrees recommends “internships, co-ops, and other significant immersive work experiences.”

For more than 12 years, the ASA has published lists of internship opportunities at no charge. Internships are posted on the ASA website and published in the December issue of *Amstat News*. The deadline for submitting internship opportunities for the December issue is October 20 each year. However, later submissions are posted online throughout the year as received. In 2016, 50 organizations posted internship advertisements (35 for graduate students only, while 15 also included undergraduate students).

For example, Novartis Oncology has used the ASA's internship postings since October 2006. Global biostatisticians submit internship project proposals with clear business benefit each September. “Goodness-of-fit” to the projects is a primary criterion for internship selection. Novartis designs internship projects to be challenging, but feasible, strongly encouraging interns to present/publish.

Novartis employed 48 interns from 1,719 applications. Sixteen interns had 20 presentations (14 at the JSM conferences) and two publications. The company subsequently hired 14 interns as full-time employees. The ASA's internship program is a “multi-win” endeavor.

Could master's-level students, as well as international students, easily find summer statistical internship spots, and what are the typical scopes of such internships?

For example, Rutgers MS students generally find paid summer internships, although the process may not be easy. Many of these internships are found through informal student networks; others are found through solicitations made from employers through our program staff and career fairs. Rutgers offers a premium tuition MS program in financial statistics and risk management, which offers resources for internship placement. Rutgers also has a premium-tuition data science program that is too recent to have a record of summer internship placement.

International students are at some disadvantage for internships. One of the motivations for hiring an intern is to assess suitability for future employment. However, immigration barriers to such future employment make this hiring less desirable. Nonetheless, our international students seem to be able to reliably find internships.

These internships routinely involve data set cleaning, assembly, and management—and often, but not always, data analysis. Data management activities are many times a large part of the career of a future statistician, and internships reflect this. Of course, the temporary nature of this employment makes duties requiring long-term involvement and commitment inappropriate.

Internship opportunities also exist in federal government agencies such as the National Institutes of Health (NIH) and U.S. Food and Drug Administration (FDA). Requirements for citizenship or permanent residency vary across agencies; prospective international students with an F-1 visa should contact individual agencies to be clear about the requirements.

At NIH, hundreds of students come each year to gain research experiences through the Summer Internship Program. Internships at NIH usually cover a minimum of eight weeks, generally starting in May or June. The summer interns enjoy various activities NIH offers, including lectures featuring distinguished NIH investigators, career/professional development workshops, and Summer Poster Day. The application is available online from mid-November to March 1. Prospective students are also strongly encouraged to contact individual

Session Presenters

The following four presenters and two discussants from academia, industry, and government participated in the JSM session titled “Effective Research-Oriented Internships: Fostering the Next Generation of Statisticians” (www2.amstat.org/meetings/jsm/2016/onlineprogram/ActivityDetails.cfm?SessionID=212393):

William Mietlowski, Novartis Pharmaceutical Corporation

John E. Kolassa, Rutgers University

Vladimir Geneus, Florida State University

Aiyi Liu, National Institutes of Health

Wei Shen (Discussant), Eli Lilly and Company

Ching-Ray Yu (Guest Discussant), Pfizer Inc.

Kelly H. Zou (Session Organizer and Chair), Pfizer Inc.

investigators they might be interested in doing their summer internship with (www.training.nih.gov/programs/sip).

As an example, the Biostatistics and Bioinformatics Branch in the Division of Intramural Population Health Research at the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) had 14 summer students—mostly graduate students—during 2012–2015. Under the supervision of an investigator, the students worked on an interesting statistical problem originating from studies conducted by the division in the summer. This often resulted in a publication in a biostatistical journal later. The summer internship experience helped the students pursue their further career objectives, such as employment or a higher degree.

What is some advice for current students who have no or very little work experience in an intense and short internship cycle?

One of the most overused statements in real estate is “Location, location, location!” A similar mantra to be considered for graduate students looking for internships: “Apply, apply, apply!” Employers understand that graduate students are seeking work experience. Therefore, those students who are in the first or final year of graduate school should apply to as many positions as possible.

Because preparing application material can be time consuming, it is wise to start this process early (many deadlines are in November). In recent years, statistics internships have been competitive due to a significantly increased number of students in statistics-related master's and PhD programs. To increase the probability of getting an internship, students should become involved in activities (e.g., workshop presentation, mentorship, network connection, etc.) that increase their visibility.

If internships of interest—such as those listed in *Amstat News*—aren't available, look for research opportunities at your school (e.g., statistics research in the college of medicine, college of engineering, college of behavioral sciences, etc.). Within those same departments, many graduate students will be in need of consulting for their thesis and dissertation. Local opportunities are great, as well. Look for short-term advertisements in local government (city and state departments). Finally, volunteering should never be overlooked. Doing some consulting for small businesses is also an option.

Once students start their internship in either a government institute or industry, they should know the needs and expectations of employers. In the pharmaceutical industry, for example, the statistical skill set is essential, but the most important component is to be a good team player, including communication and conversation.

One cannot accomplish projects without another team member, who is quite different from one in academia. So, the better impression for the internship employer, the bigger chance for the success of a possible future career in government or industry.

Are there communication barriers and benefits to students through internship roles?

While qualified students from established academic institutions are well trained in statistical theory and applications, a well-structured internship program offers an opportunity to gain real-world experience and develop collaborations with nonstatisticians. In a real-world setting, in particular, statisticians are often members of a cross-functional team. Strong technical and problem solving skills are essential, but effective communication is also a key factor for success. This includes collaborative work with colleagues in understanding scientific questions, defining research objectives, setting up a research plan, and communicating results that answer the original scientific questions.

What is SPAIG, and how can it help?

The ASA recognizes that the elements of statistical analysis can best be applied in conjunction with subject-matter experts. SPAIG's mission (<http://bit.ly/2fVqvGV>) is to identify, lead, and promote initiatives that foster partnerships between academe and business, industry, and government (B/I/G). The SPAIG aims to help the ASA member through the following activities:

1. Establishing and making decisions about a partnership award to recognize outstanding partnership or collaborative efforts across different career sectors
2. Promoting, featuring, and encouraging activities, such as organizing or cosponsoring scientific sessions or authoring statistical magazine and newsletter articles, that highlight a diverse set of collaborative case studies and successes
3. Recommending and supporting systematic salary surveys of the ASA members from industry and government
4. Periodically announcing the partnership award program and communicating the progress of initiatives and activities

The annual SPAIG award recognizes successful collaborations. In 2011, William Mietlowski wrote "The Summer Internship Partnership of ASA and Novartis Oncology: A Multi-Win Endeavor" (<http://bit.ly/2eDnY4t>), which has generated nearly 5,000 views. Every year, December's issue routinely provides internship listings.

This JSM session was well attended and well received. It had wide appeal, particularly due to the interdisciplinary nature of statistical research and collaborations, as well as the emergence of complex problems within business or government. It was highly useful to junior researchers, applied statisticians, and statistical program directors to listen to these presentations while considering future statistical internship opportunities and collaborations. The authors do hope readers revisit the top 10 tips for successful internships (<http://bit.ly/2f27Dom>) and learn from a few great examples of students who have completed and benefited from them (<http://stattrak.amstat.org/2016/04/01/4students>).

Now, let's go to the list of the latest internships available and start applying for them! Find full descriptions for these internships on *STATtr@k* at <http://stattrak.amstat.org>. ■

SCIENCE POLICY

Crooked Roads: IRS Statistics of Income at 100

William Blake, Mick Jagger, and the next 100 Years for SOI and Other Federal Statistical Agencies

Arthur B. Kennickell, Board of Governors of the Federal Reserve System

This month's guest science policy columnist is Arthur Kennickell, who was the discussant of a JSM session commemorating the first 100 years of the IRS Statistics of Income. He makes suggestions for SOI to continue its success over the next century as it faces new challenges, demands, and opportunities. Kennickell's suggestions also may help other federal statistical agencies.

~ Steve Pierson, ASA Science Policy Director

The most famous living economist, Mick Jagger (London School of Economics graduate), has offered much wisdom, but perhaps the most useful for those of us in statistics and related areas is what I call Jagger's Theorem and Corollary:

Theorem: You can't always get what you want.

Corollary: But if you try sometimes you might find you get what you need.

The proofs are left to the reader.

The wisdom I see in these constructs points to the heart of what we face in empirical research: What we want to know is often at best only remotely or statistically knowable to us, even in principle, and the available data and tests also are frequently limited.

Although the lack of internal punctuation in the corollary introduces some ambiguity, the words "try," "sometimes," and "need" seem to me the critical points to focus on. In research, what we actually need very often becomes clear only after a painful path of jettisoning wishes that we

come to realize were unrealistic or unnecessary. Still, we know that sometimes even then the odds are against us and we may need to start over. But trying—being creative and persistent about data and estimation—is virtually always the *sine qua non*.

Creativity and persistence can take us to places we had not known before, and often we see openings to other places we need to visit. To paraphrase the poet William Blake, crooked roads can be roads of genius.

It was in this light that I approached the honor of serving as the discussant in a recent JSM session organized by Barry Johnson to commemorate the 100th anniversary of the Statistics of Income Division of the IRS. I will not go into detail on any of those presentations here, but rather talk generally about points common to them to support suggestions I want to make for SOI as it moves further along the crooked road. I make them in all humility and with freely acknowledged ignorance about institutional constraints that might make them difficult or impossible to implement. Some of these suggestions also

may point to changes for other U.S. federal statistical agencies.

The IRS conducts two especially important types of "mandatory surveys" (tax returns): individual tax returns and corporate tax returns. SOI creates sample files from these (and other) universe collections. In creating those edited sample files over a long time, SOI has developed deep knowledge and skill in managing misclassifications and other errors that appear in the unedited returns. I fear this is an underappreciated type of knowledge. It is, I believe, one of the crown jewels of SOI. Other jewels are the knowledge and experience of the staff more broadly and the institutional possibilities for linkages and connections highlighted by the keynote speaker for the session, Fritz Scheuren.

In various ways, a substantial part of the work behind each technical presentation was driven by a need to compensate for the universe data not being adequate, either because insufficient detail is captured or because the data are unedited in ways that would be likely to cloud the desired analysis. At the same time, the SOI edited files, while being



Arthur B. Kennickell has served on the Federal Reserve Board of Governors since 1984 and is currently a board member. He has a PhD in economics from the University of Pennsylvania.

highly detailed—containing many records and being highly representative for high-value returns—are also not sufficient for every question. Limitations in the SOI samples are especially severe in the case of panel data when only one period of income is used in the design of the samples.

Because income is variable, but often mean-reverting, the limitation of the stratifier to one period tends to build in a substantial expectation of change in subsequent periods. To the extent variables of interest over time are correlated with longer-run income or have a spikey time-series profile, very large panel samples might be required to support meaningful estimates under such a design.

Instead of choosing between the edited universe data and the SOI edited samples or attempting to bridge differences between the two types of data through adjustments or approximations, an alternative might be to rethink the relationship between them in a way that would exploit the resources available at SOI.

One approach might be to propagate the *structure* of editing to the universe data. It would be a practical impossibility to edit the universe data in the same way as the SOI samples. But a close equivalent might be achieved through modeling, a deep learning exercise using the SOI edited data as “training data,” or a combination of the two approaches. The lower level of detail in the universe data might be addressed by capturing all details from electronically filed returns and simulating the remainder from the aggregated variables retained

in the universe data, using models estimated on the edited data. If successful, this effort would make it possible to construct much more detailed analyses, or even create special-purpose retrospective panels, without the need to consider sampling, except perhaps indirectly via the uncertainty in the simulated editing. Admittedly, building sufficient infrastructure to implement longitudinally consistent simulated editing might take substantial time and research.

In the meantime, SOI also might think about changing its design for the existing panel samples. In principle, SOI cross-sectional samples can be selected to focus on particular characteristics as of the time of sampling. In contrast, traditional panel samples must be selected in hopes of subsequently presenting a useful longitudinal picture of the relevant population. Where oversampling is not a requirement or is undesirable for some reason, simple random sampling within relatively stable strata—such as geographic classifications—would be adequate when the sample size is calculated to support analysis, taking into account the time-series variability of the variables of interest.

For the more usual SOI oversampling on economic criteria, such as income, there is a risk of selecting cases whose current values are higher or lower than normal, and determination of the sample size to support analysis would need to take into account not just the variability of the variables of interest, but also the variability in the stratifier. To the extent that behavior of interest is more related to longer-run characteristics (for

example, “permanent income”), there would be advantages to smoothing over multiple years of the values underlying the stratifier. The Survey of Consumer Finances uses such a smoothing technique in the design of its cross-sectional samples selected from SOI data to support wealth measurement (<http://bit.ly/2g4zK7T>).

In many statistical organizations beyond SOI, there is increasing pressure to use data beyond surveys and other traditional sources (often “Big Data”) that offer a prospect of cutting costs, improving representation, increasing timeliness, or avoiding technical complications from the use of sample-based data, particularly in light of nonresponse rates in traditional surveys. But many alternative data sources also have less certain provenance or less constancy of method, purpose, or availability. Especially where there is uncertainty about the true population effectively represented, as is also the case for surveys with low response rates, having reliable universe data as a point of reference is essential for crafting adjustments.

Direct linkage to universe data offers even more possibilities, aside from simply increasing the variables available for analysis. For many analytical objectives with an economic component, linkage to data derived from tax returns, which have highly elaborated provenance, would provide a firm anchor for calibration or similar techniques and a basis against which to evaluate selectivity issues that might plague data of less well-defined provenance. When there is a need to capture the upper reaches of the income

MORE ONLINE
A longer version
of this article is
available online at
[http://magazine.
amstat.org](http://magazine.amstat.org).

distribution or at least its shape, for example, such connection may be even more important. Because the data from tax returns obviously refer only to the population of filers, however, additional work also would be needed to understand the nonfiler population more deeply.

Other statistical agencies also might do well to consider their hidden strengths. Just as SOI has skill in understanding the problems in the generating processes for tax return data, other agencies have often invested considerable time and resources to develop an understanding of the relevant total survey error or other characterization of error processes in their data. Rather than view such “emergency room” skills as a painful necessity, it may be helpful to elevate them in addressing

the possibilities in alternative data sources. Aside from physical infrastructure and legal mandates, the statistical agencies have only the embodiment of their history in the accumulation of expertise in terms of subject matter and methodology. We have no meaningful alternative to fostering the evolution of those skills to sustain the high-order mission of remaining relevant, and especially so in the current time of such great extensions of what is being measured.

For SOI, strengthening the organization as a statistical agency should be a high priority for its next 100 years. Like the U.S. Census Bureau, SOI holds sensitive information. Both manage data of enormous potential social value, beyond the local uses of the agencies. The tax code allows a set of external uses to support tax

administration as well as some use by other statistical agencies, such as the Census Bureau and Bureau of Economic Analysis.

Although SOI has made great progress in engaging with outside researchers more broadly, it has yet to match the scope of engagement the bureau has achieved through its research data centers, where researchers may access and link confidential information under strictly controlled conditions. Finding a similarly appropriately controlled means of sharing information and facilitating its linkage with other sources would allow SOI to unlock the analytical energy in tax data. It also would build other supporters for an agency that should have a more central role in the nation’s statistical infrastructure. ■

Editor’s Note

The views expressed in this article are those of the author and do not necessarily reflect the view of the Federal Reserve Board or its staff.

Be part of the JSM Program Abstract Submission Now Open

December 1, 2016 – February 1, 2017 (11:59 p.m. EST)



Now accepting abstracts for:

- Contributed and topic-contributed papers
- Contributed and topic-contributed posters
- Topic-contributed panel sessions
- Speed presentations

Not sure where you fit? Check out “Be on the Program” at www.amstat.org/jsm.

To provide the best program possible, presenters must register for JSM when submitting an abstract.

www.amstat.org/meetings/jsm/2017

Celebrating Women in Statistics and Data Science



April Chen, Adrianna Jelesnianska, and Katie Colborn participate in the Speed Mentoring exercise during the Opening Mixer.

Dalene Stangl, Donna LaLonde, and Jiayang Sun

Photos courtesy of Sara Davidson, ASA Graphic Designer/Production Coordinator

The second Celebrating Women in Statistics and Data Science Conference was held October 20–22 in Charlotte, North Carolina. The conference targeted women in all career stages from all sectors of the workforce.

Four hundred enthusiastic participants joined together to share technical expertise, wisdom from life experiences, and words of inspiration. Most pronounced were women sharing transformative moments in their lives and demonstrating how these moments led to greater visibility and stature of their individual careers as well as those of other women in statistics and data science. This was perhaps most visible during the speed mentoring session, in which graduate students and early-career women were able to receive advice and encouragement from their more experienced colleagues.

The conference spotlighted the contributions of women to statistics and data science, past and present. Three recurring themes woven throughout the conference were the importance of influence, community, and knowledge.



Emma Benn, center, from the Icahn School of Medicine at Mount Sinai, chats with other attendees during the Women in Statistics and Data Science Conference in Charlotte, North Carolina.

The conference began with two short courses, one by Heike Hoffman on reproducibility in science and a second by Jennifer Van Mullekom on effective presentations. Four keynotes by Cynthia Clark, Stacy Lindborg, Wendy Martinez, and Bin Yu covered topics ranging from leaving a legacy, navigating an authentic career, Big Data challenges at federal statistical agencies, and a holistic approach to interdisciplinary research. Donna Brogan brought a historical and amusing perspective to the conference when she reflected upon discrimination

hurdles she both jumped and put to rest. Mary Gray also took participants on a historical recounting of U.S. laws to counter gender discrimination.

Technical sessions traversed a wide range of topics. One session titled “Advancing ‘Omics Data Analysis” featured Susmita Datta, Rebecca Doerge, and Xihong Lin. Jane-Ling Wang talked on “A Bridge Between High-Dimensional and Functional Data.” Nicole Lazar spoke about “Topological Data Analysis for Functional Neuroimaging.” Jiayang Sun discussed recent



Amy Richardson from Google listens to a poster presentation at the 2016 Women in Statistics and Data Science Conference in Charlotte, North Carolina.

developments in “Statistical Interface with Computer Science for Data Science.”

Mary Meyer hammered out “Practical Applications of Estimation and Inference with Shape Restrictions.” Linda Zhao enlightened the audience with “Post-Model Selection Inference and the R Package.” A group from AT&T that included Emily Dodwell, Zhengyi Zhou, and Cheryl Flynn covered “Big Data Research at AT&T Labs.” Women from Google—including Amy Richardson, Sushma Honnavara Prasad, and Valerie Hines—pitched in on both technical and professional development topics. More than 100 women shared technical expertise via speed poster sessions led by Mia Stephens, Jenise Swall, Jessica Kolschmidt, Dong-Yun Kim, and Rebecca Carter.

Professional development panels were plentiful. Nancy Reid, Kathryn Roeder, Kim-Ahn Do, and Jane Pendergast spoke about leadership. Arlene Ash guided participants toward more effective communication. Emma Benn, Maria Garcia, Meghan Kellam, and Kimberly Sellers led a panel on overcoming implicit bias. Nancy Geller and Karen Bandeen-Roche covered navigating up from disappointment, while Michelle Dunn, Nancy Flournoy,



Keynote speaker Cynthia Clark presents “Consider Your Legacy” at the Women in Statistics and Data Science Conference in Charlotte, North Carolina.

and Donna LaLonde discussed forging your path: turns and detours. Participants were encouraged to take on leadership roles by a panel of ASA presidents including Lynne Billard, Mary Ellen Bock, Nancy Geller, Sally Morton, and Jessica Utts.

The conference concluded with the presentation of travel awards by the selection committee, Kimberly Sellers, and Saki Kinney and a dinner speech by Dalene Stangl encouraging women to replace their standards of perfection with ones of courage and to play their career as a game of “Truth AND Dare.” The program in its entirety is at ww2.amstat.org/meetings/wds/2016/onlineprogram/Program.cfm. ■



Attendees shared their conference experiences on Twitter. To view more tweets like these, see Page 48 of this issue.

Melineh Richard

@RichardHasClass

Came here wondering where the jobs are. Leaving here wondering how I will narrow down choices! #WSDS2016

Jacquelyn Neal

@Jacquelyn_Neal

There are many ways to reach the same place in your career journey. A comforting sentiment from Wendy Martinez’s keynote! #WSDS2016

Landra Cunningham

@cunninghamland

Love that among the technical WSDS topics, clear and effective communication is rightfully given space. Thank you, Dr. Arlene Ash. #WSDS2016

Lori Thombs

@LoriThombs #WSDS2016

The energy and talent in this room of 375 smart women is astounding!

MORE ONLINE
Jim Balcom wrote “A Man’s Report from the Women in Statistics and Data Science Conference.” To view his report, visit his LinkedIn blog here: <http://bit.ly/2eh38Gu>.

Get on the JSM Program: Submit an Abstract or Volunteer

Regina Liu, JSM 2017 Program Committee Chair

The 2017 Joint Statistical Meetings (JSM), the largest annual statistics conference held in North America, will be in Baltimore, Maryland.

The discipline of statistics is critical for progress in such diverse fields as the environment, education, medicine, public policy, and sports. The JSM 2017 theme, “Statistics: It’s Essential,” celebrates statistics’ indispensable role from basic research to application.

The JSM 2017 Program Committee has put together 204 invited sessions. The topics are interesting and diverse, ranging from machine learning and analysis of complex data to reproducible research, climate science, precision medicine, sports policy, and survey methodology. I hope you will enjoy the program and participate by presenting your work, attending talks, visiting poster sessions, and taking Professional Development courses.

Speed Sessions

A speed session is a hybrid of an oral and poster presentation and inherits the benefits of both. It consists of 20 oral presentations of four minutes each, with a 10-minute break after the first set of 10 talks. The short oral presentations are followed by an electronic poster session on the same day. The idea is that the oral presentation hits the main point of the work to pique interest, and then the e-poster provides an opportunity to present details of the work, customized to the interests and background of the viewer.

In the past, the best speed session presentations do not try to squeeze too much information into the four-minute oral presentation, but just enough to give the big picture and attract viewers to the e-posters. Also, e-posters allow greater flexibility than other formats, such as video files and software demonstrations. This format affords a great deal of flexibility to use your creativity in getting your message across.

Given the success and positive feedback on speed sessions, we are trying to increase participation in these sessions. Besides providing a great experience for the presenter and audience, speed sessions improve the overall program by reducing overlapping sessions, since they accommodate 20 presenters—much more than the 3–7 presenters in invited or contributed oral sessions. By increasing the prominence of speed sessions, we can allow more people to have an opportunity to present at JSM and reduce the competition from overlapping sessions.

When you submit your contributed abstract, simply select “Speed” as the sub-type.

Poster Sessions

Poster sessions are a great way to generate more attention for your topic due to the use of effective visual display tools. You will have a better chance of interacting with your audience without worrying about time constraints and have the opportunity to make important connections with other professionals.

Topic-Contributed Sessions

A topic-contributed session is organized around a common theme. The session consists of five speakers, either five papers or four papers with one discussant. Topic-contributed sessions have several advantages over contributed sessions:

- The talks are focused on one theme and more cohesive
- Each speaker has 20 minutes of presentation time, instead of 15 minutes
- Session slots are limited, so high-quality papers are chosen

Topic-contributed sessions require organizers to select a theme, invite five speakers, and ensure speakers’ commitments prior to the submission deadline of January 11, 2017.

Contributed Sessions

Nearly half of JSM sessions are contributed sessions. To present a contributed paper, you need to submit a title and abstract, along with the choice of the ASA section or JSM partner society most closely associated with the topic of your paper. These sessions consist of seven papers with 15 minutes of presentation time for each.

Abstract Submission

The online abstract submission system will close February 1, 2017. This deadline is firm, so submit your abstract ahead of time. The system will be reopened for abstract editing from March 30 to April 18, 2017. To ensure a well-organized program, speakers must register for JSM when they submit their abstracts.

Session Chairs

All JSM sessions require a chair to ensure speakers are well informed about the session in advance, introduce speakers, and manage time for each speaker. I especially encourage people who are new to the profession to consider chairing sessions by contacting the program committee members.

The best way to navigate this amazing and complex program is to be part of it. ■

MORE ONLINE

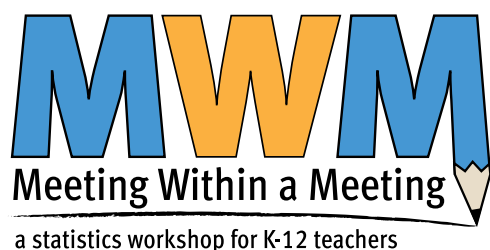
Submit an abstract and volunteer to chair a session.

Visit ww2.amstat.org/meetings/jsm/2017/beontheprogram.cfm for details.

Statistics Workshops for Math, Science Teachers Held in Chicago

Tenth Annual Meeting Within a Meeting Held in Conjunction with JSM 2016

Katherine Halvorsen, MWM Program Chair, and Rebecca Nichols, ASA Director of Education



The American Statistical Association sponsored a two-day statistics workshop called Meeting Within a Meeting (MWM) for middle- and high-school mathematics and science teachers August 2–3 at the 2016 Joint Statistical Meetings (JSM) in Chicago, Illinois.

This year, 31 high-school and 13 middle-school teachers, administrators, and mathematics educators attended the workshops that addressed statistical concepts taught in middle and high school. Attendees included mathematics content specialists from the Illinois State Board of Education, the high-school mathematics specialist for Chicago Public Schools, and the chair of the Math Operational Working Group for PARCC (Partnership for Assessment of Readiness for College and Careers).

The MWM workshops emphasize the growth of statistical literacy and thinking as teachers explore problems that require them to formulate questions; collect, organize, analyze, and draw conclusions from data; and apply basic concepts of probability. A follow-up program is planned that will help keep the teachers who attended MWM and the ASA in contact via webinars and email.

The primary goals of the MWM 2016 program (www.amstat.org/education/mwm) were to introduce middle- and high-school math and science teachers to the *Guidelines for Assessment and Instruction in Statistics Education (GAISE) Report: A Pre-K–12 Curriculum Framework* and the statistical content of the Common Core Mathematics Standards (adopted by most states, including Illinois), as well as provide an opportunity for teachers to discuss and apply these data analysis and statistical concepts.

10 Years of MWM

The first MWM workshop was held in Salt Lake City, Utah, in 2007 and focused on middle-school math and science teachers. Its success led Martha Aliaga, former ASA director of education and creator of MWM, to recommend expanding the Denver MWM workshop in 2008 to a two-day format that included separate strands for K–4, 5–8, and 9–12 teachers. MWM 2009 in Washington, DC, included parallel strands for K–4, 5–8, and 9–12 teachers on the first day with a field trip to the U.S. Census Bureau on the second day. MWM 2010 in Vancouver, BC, was the first international MWM workshop jointly sponsored by the ASA and Statistical Society of Canada and included both U.S. and Canadian presenters and participants. MWM 2011 in Miami Beach, Florida, and MWM 2012 in San Diego, California, included separate workshops for middle- and high-school teachers focused on the statistics content in the Common Core State Standards. Additionally in 2012, MWM participants were able to choose to attend the International Census at School workshop for two additional days after MWM (<http://magazine.amstat.org/blog/2012/10/01/international-census-at-school>). In 2013, MWM was held after JSM as a combined workshop for middle- and high-school teachers at the ASA office in Alexandria, Virginia. In 2014, in Boston, and 2015, in Seattle, MWM again offered separate workshops for middle- and high-school teachers.

A secondary goal was to encourage cooperation between mathematics and science teachers in the teaching of statistics.

The MWM program is designed to enhance educators' understanding of statistics and provide them with hands-on activities they can use in their own classrooms to strengthen the teaching of statistics in their schools.

“One of the primary missions of the American Statistical Association is to work for the improvement of statistical education at all levels,” said Ron



Dana Cartier, Illinois State Board of Education; Julia Brenson, Lyons Township; and Heather Brown, also from Illinois State Board of Education, participate in MWM during JSM 2016 in Chicago, Illinois.

Wasserstein, the ASA's executive director. "We are pleased to reach out to the K–12 mathematics and science community through the MWM workshop and follow-up activities," he added. "MWM will not only enhance understanding and teaching of statistics concepts in the classroom, but also provide participants with a network of statisticians and educators to assist in developing the quantitative literacy of their students."

Each workshop day of MWM 2016 consisted of three sessions and a closing period used to reflect on the day's work and allow participants to provide comments about the program to the organizers. The workshop sessions were preceded by an overview of the GAISE report and Common Core standards relevant to the audience.

New this year, MWM attendees participated in a lunch presentation and discussion as part of an ASA member initiative lead by Mark Ward of Purdue and Donna LaLonde of the ASA to bring teachers and statistics educators together to watch the *Navajo Math Circles* documentary and discuss creating stats circles. Amanda Serenevy of the Riverbend Community Math Center, who is featured in the documentary, participated in the first day of the MWM workshop as a guest and led the lunch discussion.

Middle-school teachers attended the workshop sessions on both Tuesday and Wednesday and participated in discussions about formulating statistical questions and collecting data, measures of center and variability, investigating sampling variability, comparative inferences about two populations, investigating patterns of association in bivariate quantitative data, and free K–12 statistics education resources, including the ASA poster competition.

The three sessions in the high-school program on Tuesday included discussions about statistical questions and study design; recognizing data types and the appropriate methods for displaying, summarizing, and comparing them; using the normal distribution as a measure of extremeness; and using randomization tests to make inferences and justify conclusions. High-school teachers were given the option on Wednesday to attend the second day of the middle-school workshop (to see what should be taught before students reach high school) or attend statistics education sessions at the Joint Statistical Meetings. Some also attended the Beyond AP Statistics (BAPS) Workshop (www.amstat.org/education/baps), which was held in conjunction with JSM on August 3.

MWM program chair, Katherine Halvorsen of Smith College, planned the MWM program, while ASA Director of Education Rebecca Nichols managed the website, registration and evaluation procedures, and logistics of setting up and advertising the conference. Mary Kwasny and members of the Chicago Chapter were helpful in spreading the word among Illinois educators. Ann Cannon recruited five teachers from Iowa to attend the workshop and met with them at the lunch.

MWM 2016 presenters included ASA/NCTM Committee Chair Chris Franklin (University of Georgia), ASA/NCTM Committee Past-Chair Patrick Hopfensperger (retired high-school teacher), MWM Program Chair Katherine Halvorsen (Smith College), and Anna Martin (University of Auckland, New Zealand). Martin presented at MWM as part of an effort to enhance international collaboration with the New Zealand Statistics Education Committee. Additionally, ASA President Jessica Utts, ASA Executive Director Ron Wasserstein, Chicago Chapter President Steve Olson, and Chicago Chapter members welcomed attendees.

All teachers who attended MWM were given a certificate of participation issued by the ASA and the option to receive one semester graduate credit hour through Adams State University. The ASA will provide follow-up activities throughout the 2016–2017 school year, including webinars that will continue to be archived at www.amstat.org/education/webinars.

The 2017 MWM will be held in conjunction with JSM in Baltimore, Maryland. Further information about the workshops and scholarships to help teachers attend will be available at www.amstat.org/education/mwm as it becomes available. Questions should be directed to Nichols at rebecca@amstat.org or (703) 684-1221, Ext. 1877. ■

MORE ONLINE

Read more about how MWM at JSM made a difference for small-town teachers: <http://magazine.amstat.org/blog/2016/11/01/mwm-makes-a-difference-for-small-town-teachers>

2016 Causality in Statistics Education Prize Awarded

Online Materials, Nominations Sought for 2017

The American Statistical Association awarded the fourth Causality in Statistics Education Prize to Onyebuchi Arah, professor of epidemiology in the Fielding School of Public Health at the University of California, Los Angeles (UCLA), and Arvid Sjölander, associate professor at the Karolinska Institutet (KI) in Stockholm, Sweden.

Established to “encourage the teaching of basic causal inference methods in introductory statistics courses” in 2013 by a donation by Judea Pearl, recipient of the 2012 Turing Award and professor of computer science and statistics at UCLA, the annual award recognizes the work of an individual or team that enhances the teaching and learning of causal inference in introductory statistics coursework. Funded this year by Microsoft Research and Google, \$5,000 was presented to each recipient at the 2016 Joint Statistical Meetings in Chicago.

“While the study and practice of statistics is growing in popularity and demand in both academia and professional occupations, there remains a glaring gap when it comes to causal inference. Even with the recent development of causal inference tools, which are currently sweeping new insights and application areas, most statistics educators and textbooks do not convey any material on these tools,”

2016 Prize Committee Members

Maya Petersen, University of California, Berkeley
 Dennis Pearl, Penn State University, CAUSE co-chair
 Judea Pearl, University of California, Los Angeles, co-chair
 Felix Elwert, University of Wisconsin-Madison
 Daniel Kaplan, Macalester College
 Michael Posner, Villanova University
 Tyler VanderWeele, Harvard School of Public Health
 Larry Wasserman, Carnegie Mellon University

said Pearl, who is co-chair of the prize-selection committee. “In giving this award, we not only recognize the dynamic efforts of renowned scholars, but also show other researchers and scientists that teaching causal inference can be fun and formative.”

Arah is honored for his graduate-level course titled “Logic, Causation, and Probability,” which embraces the current developments in causal inference using nonexperimental data and equips students with both theory and practical tools. The 10-week course features an introduction to principles of deductive logic; allows for substantial practice in identifying and estimating target quantities using directed acyclic graphs, probability logic, and potential outcomes language; and employs as a teaching tool “hands-on” data analysis exercises.

Sjölander is being recognized for teaching a one-week introductory course for doctoral students in epidemiology on

causal inference that covers fundamentals of causal inference, counterfactuals, causal diagrams, confounding, mediation and colliding, and advanced estimation techniques such as inverse probability weighting and marginal structural models. He also conducts a one-day course in causal diagrams for medical doctors at KI’s Research School, where students learn about problems with traditional covariate selection strategies and how causal diagrams can be used to formulate better strategies.

These winning materials and those of previous Causality in Statistics Education Award winners are available at www.amstat.org/education/causalityprize.

The 2015 prize was awarded Tyler VanderWeele, Harvard University professor of epidemiology with joint appointments in the departments of epidemiology and biostatistics. VanderWeele was honored for his innovative book titled *Explanation in Causal Inference: Methods for Mediation*

NOMINATIONS SOUGHT FOR 2017 PRIZE

The ASA is pleased to call for nominations for the 2017 Causality in Statistics Education Award. The nomination deadline is February 15, 2017. For additional information, see www.amstat.org/education/causalityprize.

CAUSE Award Submissions Wanted

The Consortium for the Advancement of Undergraduate Statistics Education (www.CAUSEweb.org) is seeking submissions for their awards programs.

A-mu-Sing Competition

Submit your statistics-related jokes, cartoons, poems, songs, videos, or other fun teaching items for cash prizes and glory. The submission deadline is March 10, 2017. See www.causeweb.org/cause/uscots/uscots17/a-mu-sing/rules for details.

Cartoon Caption Contest

On the second day of each month, a cartoon drawn by British cartoonist John Landers is posted for you to suggest statistical captions for. Submissions are due by the first day of each month. The best captions are posted on CAUSEweb, and the winner(s) receive their choice of a coffee mug or T-shirt imprinted with the cartoon. See www.causeweb.org/cause/caption-contest for details.

USPROC Competition

Jointly sponsored by CAUSE and the ASA, the purpose of USPROC is to encourage the development of data analysis skills, enhance presentation skills, and recognize outstanding work by undergraduate statistics students in class projects or long-term research projects. Submission deadlines are December 23, 2016, for summer/fall work and June 30, 2017, for winter/spring work. Winners receive cash prizes and an opportunity to present their work in a national virtual conference on undergraduate research. See www.causeweb.org/usproc for details.

USCOTS Lifetime Achievement Award

This biennial award is presented at the U.S. Conference on Teaching Statistics to an individual who, over an extended period, has made lasting contributions with broad impact to the field of statistics education, especially—but not limited to—the teaching and learning of college-level statistics. Nomination packets are due February 15, 2017. See www.causeweb.org/cause/uscots/uscots17/lifetime for details.

and Interaction, which provides accessible and comprehensive coverage of causal explanations and science around the fundamental aspects of mediation and interactions. It offers statistics educators a scholarly course material that is teachable, comprehensive, and rigorous. He was presented the award at the 2015 Joint Statistical Meetings in Seattle.

The 2014 prize was awarded to Maya Petersen and Laura B. Balzer for developing a path-blazing course, “Introduction to Causal Inference,” at the University of California, Berkeley. With clear lectures, detailed discussion assignments, and innovative labs and homework using R, Petersen and Balzer have prepared a new generation of scientists, who have acquired the tools of modern causal analysis and are equipped to tackle each step of the causal roadmap. The course is publicly available at www.ucbbiostat.com. Peterson and Balzer’s course was chosen primarily on the basis of its “teachability” and its appeal to a broad range of statistics-minded disciplines.

The inaugural Causality in Statistics Education award in 2013 was given to Felix Elwert of the department of sociology at the University of Wisconsin-Madison for his innovative two-day course, “Causal Inference with Directed Acyclic Graphs.” He was awarded the prize at the 2013 Joint Statistical Meetings in Montréal, Québec, Canada. Slides covering about eight lecture hours of this short course and accompanying publications are available at www.ssc.wisc.edu/~felwert/causality. ■

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

Jean Gibbons Teaching Fellowship

Follow in the footsteps of trailblazing statistician Jean Dickenson Gibbons and apply for a fellowship to help you earn your PhD at Virginia Tech. Earn a \$34,000 stipend per nine-month academic year.

The deadline to submit your application is January 15, 2017.

For more information, visit the Virginia Tech website at www.stat.vt.edu or contact Marco Ferreira, director of graduate programs, at marf@vt.edu. ■

Ellis R. Ott Scholarship

The Statistics Division of the American Society for Quality is offering \$7,500 scholarships to support students enrolled in or accepted into a master's degree or higher program with a concentration in applied statistics and/or quality management. This includes the theory and application of statistical inference, statistical decision making, experimental design, analysis and interpretation of data, statistical process control, quality control, quality assurance, quality improvement, quality management, and related fields.

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

AWARD	DEADLINE	NOMINATIONS	QUESTIONS
COPSS Presidents' Award	Jan.15, 2017	http://community.amstat.org/copss/home	
F.N. David Award	Jan.15, 2017	http://community.amstat.org/copss/home	
Snedecor Award	Jan. 15, 2017	http://community.amstat.org/copss/home	
Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society	Feb. 1, 2017	awards@amstat.org	Paul S. Albert albertp@mail.nih.gov
ASA W. J. Dixon Award for Excellence in Statistical Consulting	Feb. 1, 2017	awards@amstat.org	awards@amstat.org
Causality in Statistics Education Award	Feb. 15, 2017	educinfo@amstat.org	educinfo@amstat.org
Harry V. Roberts Statistical Advocate of the Year Award	Feb. 15, 2017	awards@amstat.org	John Vanderploeg vanderp@comcast.net
ASA Samuel S. Wilks Memorial Medal	Feb.15, 2017	awards@amstat.org	Sanjib Basu sanjib.ba@gmail.com
ASA Waller Distinguished Teaching Career Award	Feb. 15, 2017	awards@amstat.org	Bradley A. Hartlaub hartlaub@kenyon.edu
ASA Waller Education Award	Feb.15, 2017	awards@amstat.org	Bradley A. Hartlaub hartlaub@kenyon.edu
ASA W. J. Youden Award in Interlaboratory Testing	Feb.15, 2017	awards@amstat.org	Blaza Toman blaza.toman@nist.gov
ASA Statistics in Physical and Engineering Sciences Award	Feb. 20, 2017	Ming Li mli@alumni.iastate.edu	Ming Li mli@alumni.iastate.edu
ASA Gertrude M. Cox Scholarship	Feb. 23, 2017	awards@amstat.org	Eloise E. Kaizar ekaizar@stat.osu.edu
ASA Edward C. Bryant Scholarship	March 1, 2017	awards@amstat.org	Pushpal Mukhopadhyay pushpal.mukhopadhyay@sas.com
ASA Excellence in Statistical Reporting Award	March 1, 2017	awards@amstat.org	Alan R. Tupek alan.tupek@gmail.com
ASA Fellows	March 1, 2017	Nominations accepted at www.amstat.org	Keith F. Rust keithrust@westat.com
ASA Mentoring Award	March 1, 2017	awards@amstat.org	Jessica M. Utts jutts@uci.edu
ASA Outstanding Statistical Application Award	March 1, 2017	awards@amstat.org	Jung-Ying Tzeng jytzeng@stat.ncsu.edu
Statistical Partnerships among Academe, Industry, and Government (SPAIG) Award	March 1, 2017	awards@amstat.org	Kelly Zou Kelly.Zou@pfizer.com or Pam McGovern Pam.McGovern@nass.usda.gov
ASA Founders Award	March 15, 2017	awards@amstat.org	Jessica M. Utts jutts@uci.edu

During the last 19 years, scholarships totaling more than \$280,000 have been awarded to 52 students. Last year's scholarship winners are Andrew Walter of the University of Kansas in the MS category and Matthew Keefe of Virginia Tech in the PhD category.

Application instructions and forms can be downloaded from the statistics division website at <http://asq.org/statistics/about/awards-statistics.html>. Forms for the 2017–2018 academic year will be accepted until April 1. For more information, contact Lynne B. Hare at lynne.hare@comcast.net. ■

Call for Nominations for the 2017 Don Owen Award

The San Antonio Chapter is accepting nominations for the 2017 Don Owen Award from ASA chapters in North America. The nominee must be a member of the ASA, but is not required to be a member of the nominating chapter.

The San Antonio Chapter presents the Don Owen Award to a statistician who embodies the three-fold accomplishments of Donald B. Owen: excellence in research, statistical consultation, and service to the statistical community. Before his death in 1991, Owen was distinguished professor of statistics at Southern Methodist University in Dallas, Texas. His career serves as the standard against which nominees are evaluated.

Among Owen's accomplishments, he authored seven textbooks, seven monographs, and more than 75 articles in refereed journals; he also trained 19 doctoral and master's students. He served as an applied statistician for 10 years for the Sandia Corporation and operated his own consulting firm, specializing in quality control. Owen was editor of Communications in Statistics for both series A and B, associate editor of *Technometrics* and *JASA*; and editor of more than 50 textbooks.

The sponsor of this award, Taylor & Francis, promotes

scientific research, supports educational programs, and rewards outstanding academic achievement in the sciences through its awards program.

In addition to a cover letter highlighting the accomplishments of the nominee, the nomination packet must contain the following supporting information:

- Name of the nominee
- Degrees (titles, dates, schools)
- Present position(s), followed by significant former positions (with dates)
- List of major publications having statistical content
- List of activities related to teaching and dissemination of statistical knowledge
- List of consulting activities related to statistical problems or editorial contributions
- List of activities supporting the mission of the ASA and related professional organizations

To submit a nomination, send the nomination packet in PDF format via email to wangc3@uthscsa.edu with "Owen Award" in the subject field. Alternatively, six copies of the nomination packet can be mailed to Chen-Pin Wang, Department of Epidemiology and Biostatistics, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78229.

The deadline for nominations is January 20, 2017. ■

Call for Papers: Fall Technical Conference

You are invited to present and attend the 2017 Fall Technical Conference (FTC), sponsored by the Physical and Engineering Sciences and Quality and Productivity sections of the ASA.

FTC will be held at the Sheraton Society Hill in Philadelphia, Pennsylvania, October 5–6, 2017. The theme of the conference is "Statistics: Powering a Revolution in Quality Improvement."

Visit the conference website at <http://asq.org/cpi> for more information about the conference and submitting an abstract. The deadline for submissions is February 28, 2017.

sectionnews

Quality and Productivity

The Quality and Productivity (Q&P) Section handed out several awards in 2016. During the section's research conference in June, Georgia Mueller-Luckey from Southern Illinois University School of Medicine and Shangjie Xu from the University of California, Riverside were awarded the Mary G. and Joseph Natrella Scholarship.

The section also awarded travel grants for students to attend JSM in Chicago to Wannas G.M. Akkermans of the University of Lueven, Po-Hsu Chen of The Ohio State University, Yiqing Tian of North Carolina State University, and Cheng You of Penn State. These students were recognized at the joint Q&P/SPES mixer during JSM.

Also, during this year's Fall Technical Conference in early October, Lynne B. Hare was presented with the Gerald J. Hahn Q&P Achievement Award. Hare also gave the plenary address at the conference.

Speaking of the Hahn award, nominations for the 2017 prize are due February 24, 2017. For information about the award and nomination process, visit the Q&P website at <http://community.amstat.org/qp/scholarshipsawards/geraldjhahnqachievementaward> or contact the committee chair, Di Michelson, at di.michelson@sas.com.

In addition to the awards and prizes, the section is also sponsoring the Quality and Productivity Research Conference (QPRC), which will take place June 13–15, 2017, in Storrs, Connecticut. The theme is “Quality and Statistics: A Path to Better Life.” Abstracts can be submitted to Nalini Ravishanker at nalini.ravishanker@uconn.edu or Haim Bar at haim.bar@uconn.edu by March 1, 2017. Additional information can be found on the conference website at qprc2017.org.

For information about the section's activities, read a message from the outgoing chair at <http://magazine.amstat.org/blog/category/membernews/amstatsections/quality-and-productivity>. ■

Physical and Engineering Sciences

The Spring Research Conference (SRC) on Statistics in Industry and Technology will take place at Rutgers University May 17–19, 2017. Details, including the invited sessions and conference program, are available at www.stat.rutgers.edu/src2017.

You are cordially invited to submit a contributed talk or poster to the conference. Topics are expected

to cover a range of areas, including design and analysis of experiments; modern computing; uncertainty quantification; computer experiments; machine learning; methods on quality improvement and measurement system; and applications of data science in business, industry, and government policy making. Research on other topics related to the conference theme will also be considered; authors of such work are encouraged to submit abstracts.

The deadline to submit an abstract is January 31, 2017. To present a contributed talk or poster, email a title and the abstract of your paper with your name and affiliation to the contributed program chair, Han Xiao, at hxiao@stat.rutgers.edu with “SRC 2017—Rutgers” in the subject line.

SRC will continue the conference tradition of providing scholarships to selected students who present contributed talks or posters. To apply for a scholarship, visit the page of scholarships on the conference website.

For submission details, download the call for papers at <http://magazine.amstat.org/wp-content/uploads/2016/11/SRC2017CallForPaperFinal.pdf>. ■

chapternews

San Antonio Chapter

The San Antonio Chapter, in collaboration with the ASA Student Chapter at the University of Texas at San Antonio, hosted a membership social/mixer in October.

The event was attended by many students and faculty, as well as the officers of both chapters. Attendees enjoyed food and learned about a variety of benefits ASA, San Antonio Chapter, and student chapter memberships offer. They also learned about various opportunities to get involved with and contribute to the statistical community.

“As the largest community of statisticians and data scientists, the ASA connects all of us in academia, industry, and government in the world,” said David Han, president of the San Antonio Chapter. “It is crucial that our young future statisticians understand and take full advantage of the benefits, resources, and opportunities the ASA offers for their education, career, and professional development.”

More than 20 members joined the San Antonio Chapter and student chapter. ■

To view section news in its entirety, visit <http://magazine.amstat.org>.

Arizona

■ Arizona State University is accepting applications for a faculty position in statistics. For more information, visit www.mathjobs.org/jobs/9164. EOE.

■ Arizona State University seeks a statistician for a tenured or tenure-track assistant or associate professor position in the school of mathematical and natural sciences. Successful candidates will develop productive research programs, mentor/teach diverse students in our undergraduate and developing graduate programs, provide service to university/profession. Application deadline: December 9, 2016; if not filled, every Friday thereafter until search closed. Visit <https://newcollege.asu.edu/jobs> for complete ad. Arizona State University is a VEVRAA Federal Contractor and an EOE/AA.

California

■ The University of Southern California Center for Economic and Social Research is searching for statistics PhDs with 2+ years of relevant experience applying statistics to education or other social policy settings, a publication record demonstrating outstanding technical skills, and proven ability to work independently and creatively. Work will feature applied projects leading to publications in peer-review journals. Relocation to Los Angeles or DC required. <http://jobs.usc.edu/postings/76306> to apply. EOE.

■ Amgen's biostatistics internship position will work closely with a senior-level statistician on topics related to the design and analysis of clinical trials and/or nonclinical research. At the conclusion of the internship, this position will give a presentation summarizing the work completed during the program. Visit Amgen Career Page with keyword 29343. EOE.

Delaware

■ Continuing track faculty position, Department of Applied Economics and Statistics. The University of Delaware, Newark, Delaware. 9-months teaching 8 courses/year, 4 per semester. The primary course is STAT 200, an introductory statistics course for undergraduate students. However, there are also opportunities for other courses in data management, regression, probability, and mathematical statistics. To apply visit: <http://apply.interfolio>.

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.

Rates: \$320 for nonprofit organizations (with proof of nonprofit status), \$475 for all others. Member discounts are not given. For display and online advertising rates, go to www.amstat.org/ads.

Listings will be invoiced following publication. All payments should be made to the American Statistical Association. All material should be sent to *Amstat News*, 732 North Washington Street, Alexandria, VA 22314-1943; fax (703) 684-2036; email advertise@amstat.org.

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 www.amstat.org/jobweb.

com/38594. The University of Delaware is an EOE.

Florida

■ The Department of Mathematical Sciences at Florida Atlantic University invites applications for a tenure track position in Statistics at the rank of assistant professor starting in August 2017. Preferred areas of interest include statistical methods and statistical computing on big data, longitudinal and survival modeling, spatial and temporal modeling. FAU is an Equal Opportunity/Affirmative Action/Equal Access Institution. Apply to position 978827 at jobs.fau.edu. EOE/AA/Equal Access Institution.

■ The Jaeb Center for Health Research (www.jaeb.org), a nonprofit academic-oriented clinical trials coordinating center in Tampa Florida, is seeking a PhD biostatistician with multi-center clinical trials experience. Work will involve mentoring of master's level statisticians and epidemiologists; and working closely with clinical investigators on protocol development, analysis plans, and manuscript writing for multi-center clinical trials. Excellent benefit package. Submit CV and cover letter to careers@jaeb.org. EOE.

Georgia

■ Georgia Southern University's Dept. of Biostatistics invites applications for assistant professor in biostatistics. The full text advertisement, including information about the department, faculty, and the complete position announcement with all qualifications and application instructions, is available at <http://bit.ly/2fSnGUN>. Screening of applications continues until the position is filled. Georgia is an open records state. Georgia Southern is an AA/EO institution. Individuals who need reasonable accommodations under the ADA to participate in the search process should contact the associate provost.

Idaho

■ Idaho State University, Department of Mathematics & Statistics is seeking an assistant professor of statistics. For a detailed job description and further information about the University and the Department, visit us at www.isu.edu or www.isu.edu/math; phone (208) 282-3350. Email: stathire@isu.edu. AA/EEO Employer.

Indiana

■ The Department of Statistics at Purdue University invites applications

Director

National Institute of Statistical Sciences

The National Institute of Statistical Sciences (NISS) seeks a talented statistical scientist to serve as its Director. In 2015, NISS celebrated its 25th anniversary with a renewed focus on its mission to identify, catalyze and foster high-impact research and to offer exceptional opportunities for training to promote and advance the statistical and data sciences in the United States.

NISS is a multi-hub national institute that delivers research on critical issues in science and in public policy by leveraging the rich expertise of its staff with that of its affiliated organizations in academia, industry and government. With hubs in both the Research Triangle in North Carolina and Washington, DC, NISS is committed to providing statistical services that advance science, policy and global issues.

Outward focus of NISS is the goal for the next 25 years. NISS seeks a Director to expand impact while retaining and growing its active hubs and increasing its engagement with the broader statistical community. The hallmark of a NISS project is the high level of expertise that leads to relevant and implementable solutions. NISS achieves high-quality results by pairing experienced senior leadership with teams of talented (post-PhD) junior researchers and technical staff.

The Director of NISS also serves as the Chief Executive Officer (CEO) and is responsible for every aspect of the Institute's vision and operation, including:

- Serving as NISS' most articulate and persuasive advocate.
- Envisioning, developing and executing the scientific programs of NISS.
- Ensuring continued independence, unassailable quality, and the relevance and timeliness of the NISS research portfolio.
- Recruiting, nurturing and strengthening community engagement in support of NISS.
- Safeguarding the fiscal health of NISS while maintaining the strength of the NISS Affiliates Programs.

The Director also oversees the scientific and support staff of NISS. S/he leads the selection, mentoring and career advancement of postdoctoral fellows, and sets the tone and style of NISS as an employer.

Qualifications for the Director and CEO of NISS include a Ph.D. in the statistical sciences or a related discipline, a strong record of scientific accomplishment, experience in assembling, securing resources, and managing cross-disciplinary, multi-organization collaborations, superb communication skills and enthusiasm about NISS. It is desirable, but not essential that the Director also hold a faculty appointment at a major research university.

Additional information about NISS is available at: www.niss.org

The search committee's goal is for the new Director to begin on July 1, 2017 with a transition period to follow. The Director is expected to take over the full responsibilities of running NISS no later than January 1, 2018.

Applications and nominations should be sent to directorsearch@niss.org. Applicants should submit a letter of interest, CV/resume, and contact information for five references. Review of applications will begin immediately, and will continue until the Director position is filled. Women and members of under-represented minorities are strongly encouraged to apply.

Either the Board of Trustees Chair Mary Batcher and/or the Search Committee Chair Ray Bain may be contacted with questions and inquiries. These questions/inquiries should be sent to directorsearchquestions@niss.org.



NISS is an AA/EOE employer.

for a tenured faculty position beginning August 2017 at the rank of professor in the area of bioinformatics. To apply, please visit www.stat.purdue.edu/hiring. A background check will be required for employment in this position. Review of applications will continue until the position is filled. EOE/AA.

■ Two tenure-track openings, starting 08/01/2017, IUPUI, assistant or associate professor in statistics, actuarial science or probability. Earned doctorate in statistics, biostatistics, mathematics or related areas with strong research and funding potential/ record and effective teaching are required. Course reduction first two years, publishing research, customary student advising and service. Rank and competitive salary commensurate with qualifications. For information and application see <http://joburl.ws/8496479>. AA/EO.

Kansas

■ Department of Mathematics, University of Kansas invites applications for a Visiting Assistant Professor position (non-tenure track) in probability and/or statistics expected to begin as early as August 18, 2017. For a complete announcement and to apply online, go to <http://bit.ly/2fDcQBu> and submit reference letters to [Mathjobs.org](http://mathjobs.org) (9270). Initial review of applications will begin December 1, 2016. KU is an EO/AAE. <http://bit.ly/2eXGX4X>.

■ The Department of Biostatistics at the University of Kansas Medical Center is recruiting an open track and open rank faculty member who will be responsible for collaborative research, independent research, teaching and mentoring. The department consists of 13 PhD statisticians, 2 teaching associates, 12 staff members and over 50 graduate students. To apply go to jobs.kumc.edu/postings/12148. KU Medical Center is an equal opportunity employer.

Massachusetts

■ Framingham State University, Mathematics Department invites applications for a tenure-track position at the rank of assistant professor, beginning fall 2017. Responsibilities include a teaching load of three, four credit courses per semester, including general education courses, student advising, and service to the University community. Please contact the Human Resources Office at (508) 626-4530 or humanresources@framingham.edu. EOE.

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- Perform research on statistical methodology that will improve the quality and value of the data collected.
- Publish research papers and technical documentation of your work.

Requirements

- U.S. citizenship
- Bachelor's, Master's or Ph.D with at least 24 semester hours in math and statistics (see website for more specifics on required coursework)

Apply at www.census.gov, click on Jobs@census, Headquarters and NPC Employment Opportunities, Mathematical Statistician

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Economics and Statistics Administration,
U.S. Census Bureau



**Faculty Position (Assistant/Associate Professor)
Department of Biostatistics
University of Texas MD Anderson Cancer Center**

The Department of Biostatistics at MD Anderson Cancer Center is seeking candidates for one tenured/tenure-track faculty position at the Assistant or Associate Professor level. The department invites applications from qualified individuals able to establish themselves as research leaders and demonstrate prowess in interdisciplinary collaborative scientific research. We are willing to consider researchers who can contribute to the development of methodology and its applications to biomedical research in various areas, but are especially interested in individuals in research areas relating to integrative analyses of multi-platform genomics data, high dimensional biomedical data, and microbiome data analysis. A Ph.D. in statistics, biostatistics or a related field is required.

The Department of Biostatistics has 23 faculty members and 40 masters and doctoral level research analysts and 13 postdoctoral fellows. Faculty members are actively involved in collaborative and methodological research in such diverse areas as clinical trial design, Bayesian methodology, cancer screening and early detection, bioinformatics, genomic pathway analysis, integrative modeling of multiple types of complex data including high-dimensional genomic data, functional data analysis, image data analysis, survival analysis, statistical genetics, and behavioral/social statistics. Faculty members also have opportunities in the affiliated biostatistics doctoral programs at the University of Texas, Texas A&M University, and Rice University. The department is supported by strong resources, which includes an active quantitative research computing team with specialties in database design, web-based clinical trial support, scientific programming, and software engineering. Information about the department and programs offered can be found at <http://www3.mdanderson.org/depts/biostatistics/>. Further questions regarding the position may be directed to Veera Baladandayuthapani (veera@mdanderson.org; [subject: faculty position 2016-2017](mailto:veera@mdanderson.org)).

MD Anderson Cancer Center is an equal opportunity employer and does not discriminate on the basis of race, color, national origin, gender, sexual orientation, age, religion, disability or veteran status except where such distinction is required by law. MD Anderson Cancer Center is a smoke-free and drug-free environment.

Consideration of applications will continue until the position is filled. Interested applicants should email (or mail): a cover letter outlining the relevance of their research experience and interests to the position description, a curriculum vitae, a brief statement of current and proposed research plan, and 3 letters of recommendation to: **Faculty Search Committee, Department of Biostatistics, The University of Texas MD Anderson Cancer Center, P.O. Box 301402, Houston, TX 77230-1402. Email: biostat-search@mdanderson.org.**

■ Due to strategic transformation, Takeda, a leading research-based global pharmaceutical company, seeks talented candidates for 17 openings, from Sr. statistician to director, in Oncology, CNS, GI, and vaccines areas at R&D Headquarters in Boston, MA. Applicants should have a PhD or MS in statistics/biostatistics with good communication, interpersonal, and influencing skills. Statisticians at Takeda impact critical drug development decisions, and collaborate w/ researchers from prestigious universities. www.takedajobs.com. Takeda is an EEO,

■ The Department of Brain and Cognitive Sciences (BCS) (<http://bcs.mit.edu>) at MIT is looking to hire multiple tenure-track faculty at the assistant professor level. Affiliations with the Picower Institute for Learning and Memory and the McGovern Institute for Brain Research are possible. Please submit application materials—cover letter, CV, statement of research and teaching interests and representative reprints online at <http://bit.ly/2dpMwh8>. EOE.

■ The Dana-Farber Cancer Institute and the Harvard T.H. Chan School of Public Health are seeking a distinguished scientist to serve as chair of the Department of Biostatistics and Computational Biology at the Dana-Farber Cancer Institute. The successful

UNIVERSITY OF PITTSBURGH

Dietrich School of Arts and Sciences Department of Statistics CHAIR AND PROFESSOR

The University of Pittsburgh's Dietrich School of Arts and Science is seeking applications for Chair of the Department of Statistics beginning January 2018. The appointment would be as a tenured full professor.

Candidates should have achieved outstanding research recognition in modern areas of statistics, established interests in interdisciplinary research, relevant administrative experience and a thoughtful vision of the future of statistics in the "big data" environment. An exceptional candidate will provide leadership for the department in achieving its research and educational strategic goals, mentoring junior faculty and adeptly representing the department throughout the university. Candidates must have a Ph.D. in statistics, biostatistics or related field and a demonstrated record of scholarship, funded research, teaching and service commensurate with a tenured appointment at the University of Pittsburgh. (This position is subject to final budgetary approval.)

The department has nine tenure-stream faculty, two senior lecturers and is recruiting for two more lecturers. There are over thirty graduate students and very active undergraduate majors and minors programs. The department has close ties to the Department of Biostatistics in the Graduate School of Public Health, the Department of Psychiatry in the School of Medicine, and a number of departments within Arts and Sciences. The University of Pittsburgh has made a strategic commitment to furthering its research infrastructure for data science and also fostering its instructional programs in data science. The newly restructured School of Computing and Information and the Department of Statistics are collaborating in these developments. The University of Pittsburgh is ranked nationally as 9th in science and engineering research funding and 5th in NIH funding.

Additional information about the department can be found at <http://www.stat.pitt.edu/>. Informal inquiries about this position may be directed to Prof. Allan Sampson, Interim Chair at asampson@pitt.edu. Applicants should submit a detailed cover letter, a curriculum vitae, and names and contact information of four references. This material should be sent to StatChairSearch@pitt.edu. Review of applications will begin January 6, 2017 and continue until position is filled.

The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer and values equality of opportunity, human dignity and diversity. EEO/AA/M/F/Vets/Disabled.



candidate will also be appointed as tenured professor at Harvard T.H. Chan School of Public Health and provide leadership in the cancer training and research program. Apply: facultyaffairs@hsph.harvard.edu. EOE.

■ Statistician. Massachusetts Institute of Technology in Cambridge, Massachusetts seeks candidates for faculty positions within the Institute for Data, Systems and Society (IDSS), focusing on research and education in statistics and information systems. We will consider candidates with backgrounds in areas of statistics in various domains. Please see complete details at <https://school-of-engineering-faculty-search.mit.edu/idss-stats>. MIT is an EOE.

■ Boston University, Department of Mathematics and Statistics. Multiple positions: statistics, probability and stochastic processes. Inviting applications for tenured professor of statistics; associate professor of statistics; and tenure-track assistant professor, Probability and Stochastic Processes; PhD required, salary commensurate with experience. Positions will begin July 2017. Further information and application details are available at www.bu.edu/math/about/available-positions. We are EOE.

ACADEMIA SINICA INSTITUTE OF STATISTICAL SCIENCE Regular Research Positions

The Institute of Statistical Science, Academia Sinica, is seeking candidates for tenure-track or tenured research positions at the level of assistant, associate or full research fellow available in 2017. Candidates should have a Ph.D. degree in statistics or areas related to data science. Application materials must include (1) a curriculum vita, (2) three letters of recommendation, and (3) representative publications and/or technical reports. Additional supporting materials such as transcripts for new Ph.D. degree recipients may also be included. Except for the letters of recommendation, electronic submissions are encouraged. Applications should be submitted to

DR. JING-SHIANG HWANG Chair of the Search Committee

Institute of Statistical Science, Academia Sinica
128 Sec. 2 Academia Road, Taipei 11529, Taiwan,
R.O.C.

Fax: +886-2-27831523

E-mail: recruit@stat.sinica.edu.tw

Application materials should be received by **December 29, 2016** for consideration, but early submissions are encouraged.



Open-Rank Faculty position(s) at the Department of Biostatistics, Columbia University

The Institution: The Department of Biostatistics at Columbia University's Mailman School of Public Health seeks applicants for open-rank tenured or tenure-track faculty position(s) in Biostatistics.

The Department of Biostatistics at Columbia University is one of the premier biostatistics departments in the nation. The Department has more than 30 faculty (including 11 ASA Fellows) and 15 biostatistician research staff members. The Department boasts strong research profiles in clinical trial design, survival analysis, nonparametric and semi-parametric statistics, functional data analysis, imaging statistics, statistical genetics, and precision medicine, and many other fields. The Department has built strong collaborative connections within the Mailman School of Public Health (MSPH), a top-ranked school nationally, and in the world-class Columbia University Medical Center (CUMC). The Department has thriving education programs leading to MS, MPH, PhD, and DrPH. degrees.

MSPH is one of the largest recipients of sponsored research for all schools of public health in the nation. Its internationally recognized and highly interdisciplinary faculty is comprised of over 500 fulltime faculty members, of whom almost 40 percent hold joint or interdisciplinary appointments with other departments of the university, as well as a large network of adjunct faculty.

CUMC includes four schools (College of Physicians and Surgeons, College of Dental Medicine, School of Nursing, and Mailman School of Public Health) and accounts for roughly half of the University's \$4 billion annual budget. CUMC provides world-class leadership in scientific research, health and medical education, and patient care. CUMC faculty have made profound breakthroughs historically – among them, the first blood test for cancer, the first medical use of the laser, and the first successful transfer of genes from one cell to another.

Responsibilities: Successful candidates will maintain an active research program, both in biostatistical methodology and in collaborative research; teach effectively, both to graduate students in biostatistics and to students from outside the department; mentor graduate students; provide service to the department, the school, the university, and the profession.

Qualifications: Competitive candidates will hold a Doctorate degree in statistics, biostatistics, or related quantitative field by the start date. For a tenure track position, junior faculty candidates should demonstrate strong potential in research and teaching, in addition to the ability to secure independent funding; competitive senior faculty candidates should be internationally recognized scholars who demonstrate excellence in research, teaching and mentoring. Consideration for tenure requires strong teaching, research and publication records in addition to the ability to secure external funding.

Applications: Send a letter of interest accompanied with curriculum vitae to: academicjobs.columbia.edu/applicants/Central?quickFind=63650

Deadline: Review of applications begins in December 2016 and will continue until the position is filled.

Web Sites: Biostatistics (<http://www.mailman.columbia.edu/academic-departments/biostatistics>); MSPH (<http://www.mailman.columbia.edu/>); CUMC (<http://www.cumc.columbia.edu/>).

Contact: Contact Katy Hardy (ch336@cumc.columbia.edu) with any questions.

Columbia University is an Equal Opportunity/Affirmative Action Employer



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EOE

Statistical Career Opportunities with Westat

Westat is an employee-owned corporation headquartered in Rockville, Maryland. We provide statistical consulting and survey research to the agencies of the U.S. Government and to a broad range of business and institutional clients. With a strong technical and managerial staff and a long record of quality research, Westat is a leader in the statistical services field.

We are currently recruiting for the following positions:

Senior Survey Sampling Statistician—International Surveys Westat is seeking a senior survey sampling statistician for work on international surveys in developing nations. This position requires a master's degree in statistics or survey research coupled with seven (7) or more years in sample survey design, or a PhD in statistics or survey research and five (5) or more years in sample survey design. Candidates would benefit from knowing SAS, R, and other statistical software packages although candidates are not required to do programming.

Senior Manager, Statistical Computing Unit This position requires candidates to have a strong statistical or other quantitative background and at minimum a master's degree in computer science, statistics, math, physics, or a related data science coupled with at least ten (10) years of experience in statistical or other data-intensive computing. Five (5) years of supervisory experience is also required.

Senior Survey Sampling Statistician This position requires a master's degree in survey sampling, statistics, survey research, or a related field with twelve (12) or more years in sample survey work or a PhD in survey sampling, statistics, survey research, or a related field and ten (10) or more years in sample survey work. Candidates would benefit from knowing SAS, R and other statistical software packages although candidates are not required to do programming.

Biostatistician Westat is seeking a biostatistician or statistician with experience analyzing health data. A master's degree in biostatistics or statistics and five (5) years of experience or a PhD in biostatistics or statistics is required.

Senior Biostatistician This position requires a master's degree in biostatistics or statistics and ten (10) years of experience, or a PhD in biostatistics or statistics and five (5) years of experience. Experience leading research teams, and knowledge of SAS or R is also required.

Westat is an Equal Opportunity Employer and does not discriminate on the basis of race, creed, color, religion, sex, age, national origin, veteran status, disability, marital status, sexual orientation, citizen status, genetic information, gender identity, or any other protected status under applicable law. To apply, go to www.westat.com/careers.

www.westat.com

Minnesota

■ The school of statistics at the University of Minnesota invites applications for two full-time, tenure-track positions beginning fall 2017. Appointments are 100% time over the nine-month academic year. Appointments are at the rank of assistant professor, depending on qualifications and experience and consistent with collegiate and University policy. For full details, visit www1.umn.edu/ohr/employment/index.html referencing Job Opening ID 311795. EOE.

Missouri

■ Biostatistics Division/Neurology Department, Washington University in St. Louis invites applications for research track faculty position. PhD in biostatistics, statistics, epidemiology or related field. Must have strong interest in collaborative research—Alzheimer's Disease/aging studies. Expertise in design and analysis of longitudinal and epidemiological studies highly desirable. Rank/salary commensurate with qualifications and experience. WU offers an excellent research environment. Submit CV, research interests, 3 recommendation letters: biostat-searchcommittee@email.wustl.edu. EOE.



FACULTY POSITIONS IN STATISTICS

Virginia Tech (www.vt.edu) has multiple faculty openings (from two up to four) in the Department of Statistics (www.stat.vt.edu) to start Fall 2017 at our Blacksburg, VA campus. Appointment at the rank of collegiate assistant professor is preferred, but the associate level will be considered for exceptional candidates. These are full-time multi-year appointments (three years for assistant professors and five years for associate professors) with multi-year renewal upon successful review.

We seek candidates who are passionate about teaching statistics to undergraduate and graduate students. Responsibilities include teaching three courses per semester, where successful candidates will:

- make significant contributions to our instruction in statistics; coordinate introductory and service courses, engage in a variety of significantly growing statistics curricula across the university, and lead efforts in curriculum enhancements and innovative pedagogy;
- continue to develop professional capabilities and participate in scholarly activities, including travel to and participation in professional conferences and societies; and participate in department, college, and university service and governance, as well as professional service.

These positions are part of a major emphasis on statistics, including computational modeling, data science and analytics, and empirical decision making at Virginia Tech. Successful applicants will have the opportunity to be key players in the creation of the university's "Data Analytics and Decision Sciences" destination area and to teach in the Computational Modeling and Data Analytics program (www.science.vt.edu/ais/cmda/) within the College of Science's Academy of Integrated Science as well as the School of Neuroscience (www.neuroscience.vt.edu/index.html).

Applicants must have a Ph.D. in Statistics, Biostatistics, or a related field, including Education and Educational Psychology doctorates with a strong statistical emphasis, and have broad intellectual interests in statistics and statistics education along with a strong promise for being a leader in the instructional mission of the department. Desirable characteristics include a record of pedagogical achievement and vision, creativity, and leadership skills relevant to instruction.

Applications must be submitted online at www.jobs.vt.edu (posting #TR0160135). The application should include a cover letter, curriculum vitae, and a teaching statement that specifically addresses your teaching experience and passion for communicating statistics and statistical methods. Please include names, addresses, telephone numbers, and e-mail addresses for three or more references in the cover letter. As part of the hiring process, the successful applicant must pass a criminal background check.

Questions regarding the position can be directed to Dr. Pang Du, Chair, Faculty Search Committee, Hutcheson Hall, 250 Drillfield Dr., Virginia Tech, Blacksburg, VA 24061, Tel: (540) 231-5198, Email: vtstat_search2017@vt.edu. Applications will be accepted until the position is filled, but all applications received by February 1, 2017, will be guaranteed full consideration.

Virginia Tech is an Equal Opportunity/Affirmative Action Institution.

New Jersey

■ The Department of Statistics & Biostatistics, Rutgers University seeks outstanding applicants for two tenure-track positions all ranks to start fall 2017. Applicants must have PhD in statistics or related field by Sept. 1, 2017. Responsibilities: teaching/supervising both undergraduate, graduate programs, and conducting original research in statistics, big-data, data science, and interdisciplinary research of statistics with biology or medicine preferred. Apply online: Rutgers Interfolio website <http://apply.interfolio.com/37771> AA/EOE.

■ The Department of Statistics and Biostatistics and the Center for Integrative Proteomics Research at Rutgers University seek to hire a tenure-track open rank faculty position with strong research and teaching interests in statistical analyses of biological and biomedical information. Applicants must have a PhD in statistics or related field by Sept. 1, 2017. Apply online through the Rutgers Interfolio website <http://apply.interfolio.com/36128> AA/EOE.

New York

■ The mathematics department of Syracuse University will hire one tenure-track

**Department of Health and Human Services
National Institutes of Health
National Institute of Allergy and Infectious Diseases
Biostatistics Research Branch**

The Biostatistics Research Branch at the National Institute of Allergy and Infectious Diseases is seeking candidates with a Ph.D. in statistics or Biostatistics. Statisticians in the group have three main functions: conducting independent research on statistical methodology, oversight of large collaborative medical studies, and small-scale collaborations with individual researchers. Collaborative opportunities include bio-defense, HIV/AIDS, immunology, transplantation, vaccine development, and bioinformatics. This is a pre-application announcement to gauge interest. Applicants should send their resume and three references to Dean Follmann, Chief BRB at dean.follmann@nih.gov



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VANDERBILT UNIVERSITY

**Chair, Department of Biostatistics
Vanderbilt University School of Medicine
Nashville, Tennessee**

Vanderbilt University School of Medicine announces a national search for the Chair of the Department of Biostatistics.

The Department of Biostatistics is recognized nationally and internationally for its research and educational programs. Its 33 full-time faculty, 20 staff biostatisticians and 5 computer analysts have strong independent funded research support programs and play prominent roles in several key institutional research centers, in addition to having close collaborative ties to investigators across the Medical Center and the University. In particular, the Department of Biostatistics interacts closely with the Departments of Biomedical Informatics and Health Policy and the Division of Epidemiology within the Department of Medicine. The Department of Biostatistics has an extensive graduate program that offers both a PhD and MS degree and currently has 28 graduate students enrolled.

The next Chair of Biostatistics will have a sustained record of excellence in scholarly activity, an exceptional scientific reputation, and will demonstrate the visionary leadership skills commensurate with the quality of the Department. She/he will work closely with related departments, will have been active in national activities, and have a professional network that will be an important asset in recruitment and reputation building.

Vanderbilt University is an Equal Opportunity / Affirmative Action Employer.

Qualified individuals should submit letter of interest and CV to:

David F. Penson, MD, MPH
Chair, Biostatistics Chair Search Committee
c/o Suzanne Alexander
suzanne.alexander@vanderbilt.edu

ASSISTANT PROFESSORS OF BIOSTATISTICS

The Division of Biostatistics at the University of Minnesota School of Public Health is announcing the opening of two, non-tenure-track (contract) faculty positions at the rank of Assistant Professor. Applicants for both positions must have a PhD in biostatistics, statistics, or a closely related field. Specific details for the two positions can be found below.

Masonic Cancer Center: One position will collaborate with investigators and clinicians in the University of Minnesota Masonic Cancer Center, an NCI-designated comprehensive cancer center covering basic, clinical and population sciences. We are interested in applicants who have strong interests in collaborations with biomedical investigators, particularly those with some experience and a resume strong enough to support grant applications. Priority will be given to candidates who are willing to build long-term working relationships with Cancer Center members and take on a variety of small, in-house projects including protocol reviews.

Coordinating Center for Biometric Research (CCBR): The second position will be based at the CCBR—a coordinating center focused on infectious diseases with current studies related to HIV, influenza and Ebola—and will collaborate with investigators and clinicians in the U of M Academic Health Center with a focus on infectious disease research. Applicants must have a commitment to collaborative research with biomedical investigators supported by grant funding and a desire to be part of an ongoing, multidisciplinary team. Expertise in contemporary methods for the analysis of a variety of high-throughput technologies is an asset.

The Division of Biostatistics currently includes 35 graduate faculty and 65 staff, and offers MS, MPH, and PhD degrees. Current faculty research in statistical methodology includes analysis of spatial and longitudinal data, Bayesian methods, computer-intensive methods such as Markov chain Monte Carlo, survival analysis, clinical trials design, statistical genetics/genomics, generalized linear models, latent variable models, and categorical data analysis. The Division has an international reputation as the home of the statistical coordinating centers for a number of major clinical trials.

Applications received before December 1, 2016 will be considered for a first round of interviews, but the positions will remain open until filled. The salary range for this faculty position is very competitive and the University of Minnesota offers excellent fringe benefits. These are non-tenure-track contract positions, with the initial period of the contracts set at two years.

Applicants should submit a cover letter, current curriculum vitae, and the names of at least three references online at: z.umn.edu/313341. Please reference requisition #313341. In addition, a letter of recommendation from each of the three references should be sent to: biosearch@biostat.umn.edu.

For additional information regarding the Division of Biostatistics at the U of M School of Public Health, please visit our website at: sph.umn.edu/biostatistics

The University of Minnesota is an equal opportunity educator and employer



SCHOOL OF
PUBLIC HEALTH
UNIVERSITY OF MINNESOTA

Division of Biostatistics

assistant professor in Statistics beginning August 2017. Requirements: PhD in statistics or in mathematics with concentration in statistics. Submit the following items at www.mathjobs.org: a cover letter, CV, three letters of recommendation addressing research qualifications, and at least one letter of recommendation addressing teaching. Also submit at www.sujobopps.com: CV, an online faculty application. EOE.

North Carolina

■ The Department of Biostatistical Sciences (DBS), Wake Forest School of Medicine, Winston-Salem, NC, invites applications for tenure-track assistant or associate professor positions. A vibrant unit with 24 faculty, DBS has an extramural funding record including geriatrics, cardiovascular disease, diabetes, women's health, population genetics, and cancer control. PhD in biostatistics, statistics, informatics, or related field with experience collaborating with medical or public health professionals preferred. www.phs.wakehealth.edu/publicjobs.cfm. EOE.

Ohio

■ Assistant Professor in statistics, University of Dayton, starting August 16, 2017. Applicants must anticipate PhD in statistics by July 1, 2017. Details are at <http://jobs.udayton.edu/postings/21335>. As an Affirmative Action and Equal Opportunity Employer we will not discriminate against minorities, females, protected veterans, individuals with disabilities, or on the basis of sexual orientation or gender identity.

■ The Department of Statistics at The Ohio State University searches for three tenured/tenure-track faculty: one open-rank position with expertise in statistics and machine learning; two assistant professors with expertise in predictive analytics and environmental analytics, respectively. PhD in statistics (or related area) expected by the start of Autumn Semester 2017; apply electronically at <https://academicjobsonline.org/ajojobs/7935>. Review process will begin November 1, 2017. EEO/AA employer

Pennsylvania

■ The Wharton Department of Statistics, University of Pennsylvania, is seeking full-time, tenure-track faculty at any level: assistant, associate, or full professor, appointment beginning July 2017. Applicants should show outstanding capacity in research and teaching. Applicants must have a PhD (expected completion by June 30, 2018 is acceptable) from an accredited institution.

Apply: <https://statistics.wharton.upenn.edu/recruiting/facultypositions>. Questions can be sent to statistics.recruit@wharton.upenn.edu. EOE.

Tennessee

■ Vanderbilt University School of Medicine announces a national search for Chair, Department of Biostatistics. The Department's 33 full-time faculty, 20 staff biostatisticians and 5 computer analysts have strong independent research support programs and play prominent roles in several key institutional research centers. Extensive graduate program offers both PhD and MS degrees. Submit letter of interest and CV to: David F. Penson, MD, MPH, c/o Suzanne Alexander at alexander@vanderbilt.edu Chair, PhD.

Virginia

■ Department of Statistics, University of Virginia, invites applications for tenured/tenure-track/non-tenure-track positions. Applicants must present evidence of outstanding accomplishments and promise in research and teaching as appropriate. Candidates should be dedicated to UVA's mission of excellence in research (tenure-track), teaching graduate/undergraduate courses, and service. We expect substantial growth due to University of Virginia President's Big Data Initiative. Posting at <http://statistics.as.virginia.edu/faculty-hiring>. EO/AA Employer.

International

■ Wang Yanan Institute for Studies in Economics & School of Economics, Xiamen University, China. Full-time, tenure-track/tenured professorship positions in statistics beginning Sept. 2017. Preferred areas of specializations are theoretical and applied statistics. PhD in statistics or probability theory must be completed by August, 2017. Send applications, including cover letter, CV, samples of research work, and three reference letters, to recruit.wise.xmu@gmail.com before June 30. EOE.

■ SUNY Korea, a global campus of Stony Brook University, seeks applicants for a tenure-track faculty position starting Spring 2017. Qualifications: American education experience, fluent English, PhD in mathematics, statistics or a related field. To apply: Send the following items to hongshik.ahn@stonybrook.edu: Cover letter: CV, teaching statement, research statement, list of three references, applications will be accepted until the position is filled. www.sunykorea.ac.kr. www.ams.stonybrook.edu. EOE. ■

EMORY UNIVERSITY

ROLLINS SCHOOL OF PUBLIC HEALTH DEPARTMENT OF BIostatISTICS AND BIOINFORMATICS

FACULTY POSITIONS AVAILABLE AT ALL LEVELS

The Department of Biostatistics and Bioinformatics is seeking to fill up to two openings that would be at the tenured (full or associate professor) or tenure-track (assistant professor) level. We are recruiting for faculty in all areas, but we especially welcome applications from candidates with research interests focused on the development and application of quantitative methods for high-dimensional data analysis and integrative data analytics. For one position, preference will be given to individuals specializing in biomedical imaging research, to build upon the department's Center for Biomedical Imaging Statistics with links to imaging research across the health sciences. Responsibilities associated with these positions include methodological and collaborative research, teaching, and the supervision of graduate students.



Collaborative opportunities exist within the Rollins School of Public Health departments of epidemiology, behavioral sciences and health education, health policy and management, environmental and occupational health, and global health. Research opportunities also exist throughout Emory's Woodruff Health Sciences Center including the School of Medicine, the Winship Cancer Institute, Yerkes Primate Center, the Vaccine Center, and the Center for AIDS Research.

The department currently has 27 doctoral faculty and 8 masters level associate faculty members with primary appointments. The department participates in the Atlanta Clinical and Translational Research Institute, serves as the Data Coordinating Center for several NIH clinical trials, and operates the Biostatistics Consulting Center. The department offers a doctoral graduate program in biostatistics from the Laney Graduate School of Arts and Science and master's degree programs in biostatistics and public health informatics from the Rollins School of Public Health. A concentration in bioinformatics, imaging, and genetics (BIG) is available at the doctoral level.

Requirements: doctoral degree in biostatistics/statistics or a related field; strong record of or high potential for methodologic research; intent and ability for scientific collaborative research and graduate level teaching; excellent oral and written communication skills. Candidates for associate or full professor should have an established record of funded research.

Salary and rank commensurate with experience. Review of applications begins upon receipt. A letter summarizing experience, a statement of research interests, a complete curriculum vitae, and three reference letters should be sent to:

Faculty Search Committee, c/o Mary Abosi (mabosi@emory.edu)

Emory University, Department of Biostatistics and Bioinformatics,
1518 Clifton Rd., NE, Atlanta, GA 30322

<http://www.sph.emory.edu/hpbios.html>

To apply, the applicant must also apply on line at:

Tenure-track Assistant Professor: https://sjobs.brassring.com/1033/ASP/ITG/cim_jobdetail.asp?partnerid=25066&siteid=5449&areq=56384br

Tenured Associate or Full Professor: https://sjobs.brassring.com/1033/ASP/ITG/cim_jobdetail.asp?partnerid=25066&siteid=5449&areq=56383br

Consideration of applications will begin immediately, and applications will be considered until positions are filled. Successful candidates must be authorized to work in the United States.

The Rollins School of Public Health of Emory University is an equal opportunity/affirmative action employer. The department has a culturally diverse faculty and strongly encourages applications from women and minority candidates.



香港中文大學
The Chinese University of Hong Kong

Applications are invited for:-

Department of Statistics

Professor

(Ref. 160001YJ)

Applications and nominations are invited for a faculty post at Professor level in the Department of Statistics. The post targets senior and prominent scholar with outstanding research achievements and teaching track record in all areas of statistics. A Ph.D. in statistics or a related field is required.

Appointment will be normally be made on contract basis for up to three years initially commencing August 2017, which, subject to mutual agreement, may lead to longer-term appointment or substantiation later. Outstanding candidates with substantial experience may be considered for substantive appointment forthwith.

Application review will commence in January 2017, and will continue until the post is filled.

Application Procedure

The University only accepts and considers applications submitted online for the post above. For more information and to apply online, please visit <http://career.cuhk.edu.hk>.

Applicants should complete the online application form and upload a cover letter, a full curriculum vitae, a statement of research and teaching interests, and copies of up to five recent publications by January 15, 2017.

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Department of Statistics

COLUMBIA UNIVERSITY

Faculty Positions Starting Fall 2017

The Department of Statistics invites applications for a faculty position in applied/interdisciplinary statistics to begin July 1, 2017. The position may be filled at any rank from tenure-track assistant professor through full professor with tenure. A Ph.D. in statistics or a related field and commitment to high quality research and teaching in statistics and/or probability are required. Candidate will be expected to sustain an active research and publication agenda and to teach in the departmental undergraduate and graduate programs. Candidate interested in an affiliation with the Data Science Institute are strongly encouraged to apply.

The Department currently consists of 30 faculty members, 50 PhD students, and over 300 MA students. The Department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. For further information about the Department and our activities, centers, research areas, and curricular programs, please go to our webpage at:

<http://www.stat.columbia.edu>

For information about the Data Science Institute, please see web page at:

<http://datascience.columbia.edu>

Applicants at all ranks are required to create an applicant profile and upload a CV through Columbia's online Recruitment of Academic Personnel System (RAPS). To begin the application process, please go to: <https://academicjobs.columbia.edu/applicants/Central?quickFind=63544>

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

Review of applications begins on **December 2, 2016**, and will continue until the position is filled.

Columbia University is an Equal Opportunity/Affirmative Action employer.

SOCIAL CHATTER

What our followers are saying online

Women in Statistics and Data Science Conference attendees shared their experiences and photos on Twitter. Here is what a few of the attendees had to say.

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Melineh Richard

@RichardHasClass Career goals formed at #wsds2016. Entry level, senior, global expert, TED speaker, ASA prez. #whynot dream big when surrounded by greatness?

Emma Benn @EKTBenn

"One of my biggest life lessons is to learn to call on friends." - #KimSellers @Georgetown on #CareersAndKids panel at #WSDS2016. #RealTalk

Landra Cunningham

@cunninghamland "Be kind to people. Be hard on problems." Stacy Lindborg at WSDS 2016 #WSDS2016 #womenin-science

Alicia Carriquiry

@ALCarriquiry #wsds2016 is great this time (just as last time). Inspiring talk by always thoughtful Cynthia Clark, great to be among many smart fun women!



Sally C. Morton @sallycmorton

The women take over again! #wsds2016



Hannah Weeks @anasemanas

What to do with free time at a conference? Go to a science museum, of course. @LucyStats #WSDS2016

TELL US!

What drives you up a wall? Tell us your statistics pet peeve! Share your answer with us on social media. Be sure to tag @AmstatNews



Statistics

The release of SAS/STAT® 14.1 brings you more statistical techniques for your data analysis.

SAS/STAT 14.1 Highlights

Generalized additive models by penalized likelihood estimation. Apply this technique, which provides automatic model selection by optimizing model fitting criteria, to your large data problems.

Imputation for survey data. Employ single and multiple hot-deck and fully efficient fractional imputation methods to handle nonresponse.

Additional model selection methods. Use the LASSO method for selecting generalized linear models or the group LASSO method for selecting general linear models.

Classification and regression trees. Use familiar modeling syntax to specify trees and display results with ROC plots as well as tree diagrams.

Recent SAS/STAT Highlights

Analysis for spatial point patterns. Understand locations of random events, such as crimes or lightning strikes, and how other spatial factors influence event intensity.

Weighted GEE methods. Deal with dropouts in longitudinal studies with a method that produces unbiased estimates under the missing-at-random (MAR) assumption.

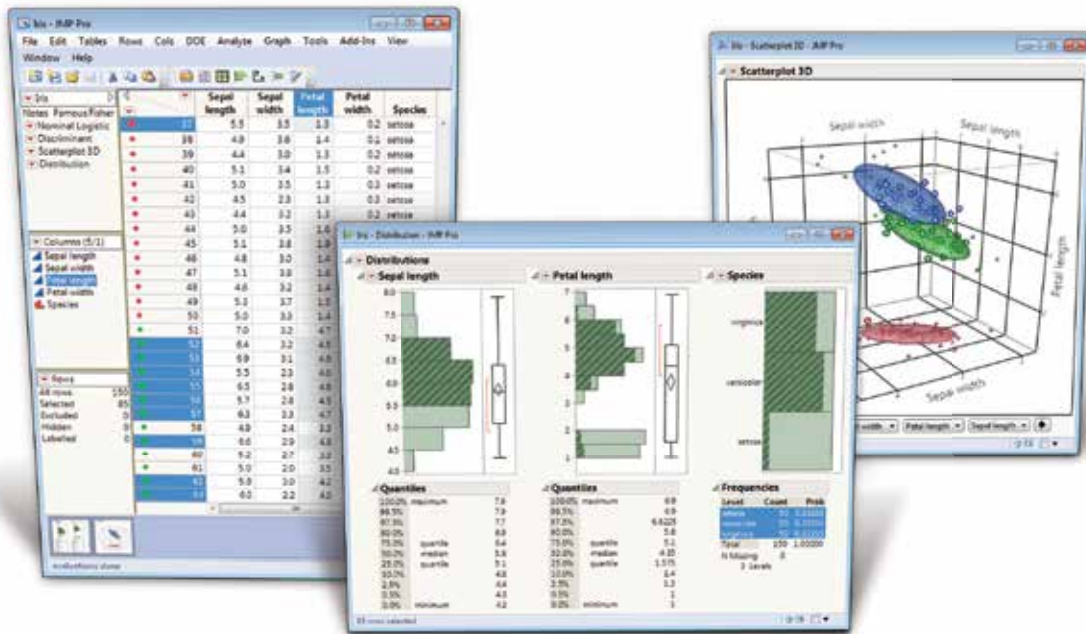
Item response models. Calibrate test items and evaluate respondents' abilities with item response models.

Proportional hazards regression models for interval-censored data. Apply these popular regression models in survival analysis when the data are interval-censored.

Bayesian choice models. Use Bayesian discrete choice models to model consumer decisions in choosing products or selection from multiple alternatives.

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- Cluster Analysis
- Nonlinear Modeling
- Graphical Application Development Environment
- Interactive Query Building for Connecting to Databases
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