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AMSTATNEWS

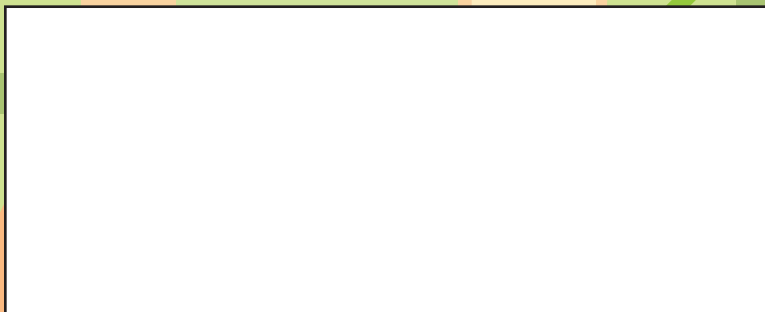
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The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, 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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Evidence-Based Policy at the U.S. Department of Labor

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.

- 31 **STATtr@k**
Key Strategies for a Successful Analytics Job Search

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.

NEXT MONTH ...

We'll have the results of the ASA election and a call for proposals for JSM 2017. We'll also feature interviews with the speakers of the Women in Statistics and Data Science Conference. Registration for the conference begins June 2.

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Celebrating the 20th Anniversary of the AP Statistics Exam

What do 1,761,116 current and former high-school students have in common? Answer: They have taken an Advanced Placement (AP) Statistics exam sometime during the past 19 years. And on the afternoon of May 12, an estimated 204,000 students will take the 20th annual offering, bringing the total to almost 2 million students. The accompanying figure shows the growth over the 20 years the AP Statistics exam has been offered.

I've been involved with the writing and grading of the exam since I joined the committee that develops the exam (appropriately named the Test Development Committee, or TDC) in 1997. I currently serve as the chief reader and, in addition to working with the TDC, I'm responsible for oversight of the grading of the free-response portion of the exam.

In honor of the exam's 20th anniversary, I provide a behind-the-scenes look at its features, including who writes it, who grades it, and why people keep coming back to grade exams for a full week!

How Do Students Use the AP Exam to Get College Credit for a Statistics Course?

The AP Statistics course is taught in high schools, usually over the full school year, and covers content similar to a standard one-semester introductory statistics college course. In May of each year, a standardized AP Statistics exam is offered, consisting of 40 multiple-choice and six free-response questions. (Not all students who take the course choose to take the exam.) Scores on the exam are a composite of the two question

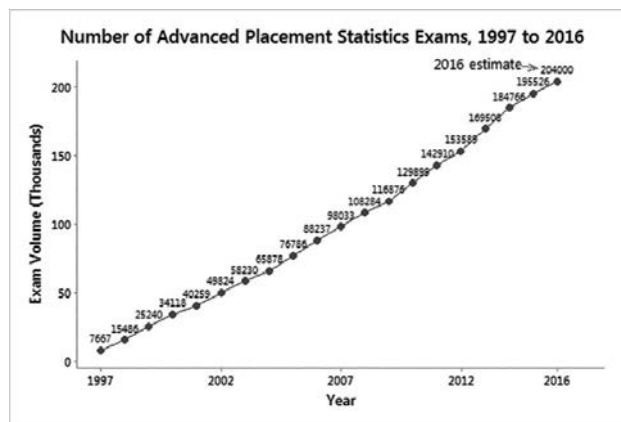
types and range from a low of 1 to a high of 5. Many universities grant credit for the introductory statistics course to students who score 3, 4, or 5. The College Board provides a search facility so students can determine the policy for any particular college. In 2015, the distribution of scores was similar to previous years, with 57.75% of test-takers earning a score of 3 or more, with 13.4%, 19.1%, and 25.2% scoring 5, 4, and 3, respectively.

Who Writes the AP Statistics Exam?

The exam is written and revised by the TDC consisting of three college faculty members (currently from Iowa State, Duke, and Clemson), three experienced AP high-school teachers, and a College Board adviser. These members are joined by the chief reader and two content specialists from Educational Testing Service (ETS). All the free-response questions and most of the multiple choice questions are written by individual members of the TDC, but they go through numerous revisions during discussions with the full committee before they are finalized. Free-response questions are used on

only one exam, while some multiple choice questions are used on numerous exams to allow statistical equating of scores across exams and years. Past free-response questions are available at <http://bit.ly/1qWCQfM>.

In addition to working with the TDC to develop the exam, the chief reader is responsible for the entire scoring process (explained below), including developing scoring rubrics for each free-response question, selecting the individuals who will grade the exams, and overseeing the week-long scoring process. Chief readers serve terms of three to five years, and all my chief reader predecessors have been accomplished members of the statistics education community. The inaugural chief reader was 2001 ASA President Dick Scheaffer, followed by Roxy Peck, Brad Hartlaub, Chris Franklin, and Allan Rossman. In the accompanying photo, ETS content expert Jeff Haberstroh is shown with four of the former chief readers. Jeff was instrumental in getting the AP Statistics Program started and guided it through many years of growth.



Jessica Utts



Educational Testing Service specialist Jeff Haberstroh (center) with former AP Statistics chief readers (from left) Allan Rossman, Chris Franklin, Roxy Peck, and Dick Scheaffer

Who Grades the AP Statistics Exam, and When and Where Do They Do It?

The multiple choice questions are, of course, computer graded. But with six free-response questions and more than 200,000 exams, there are over 1.2 million questions that must be manually graded! This grading is done by a large group of dedicated college professors and AP Statistics high-school teachers who gather in June and read exams for seven consecutive days. In 2015, there were more than 800 individuals involved in the reading held at the Kansas City Convention Center. In his September 2012 President's Column (<http://bit.ly/1S8npv4>), Bob Rodriguez provided an excellent account of what he learned by spending a few days observing the 2012 reading, including quotes from some of the participants.

For the first 10 years (1997–2006), the reading was held on a college campus (The College of New Jersey in 1997 and the University of Nebraska thereafter), and the readers stayed in dorm rooms and ate in the dorm cafeteria. There were 7,667 exams the first year (1997), graded by 57 readers. But alas, as the number of exams and readers grew, no college campus was available to accommodate the large number of people required to accomplish the task. In 2006—the last year at the University of Nebraska—there were about 89,000 exams and almost 350 readers.

Convention centers are now used, with readers housed in nice

hotels and meals served in the convention center. All travel and accommodation expenses are paid, and a modest stipend is provided, but the reason people keep coming back is that the reading provides an enriching personal and professional development experience.

Why Would Anyone Want to Spend a Week Grading AP Exams?

As the old saying goes, “I guess you had to be there.” As much as people try to describe why they keep coming back to grade exams, it’s difficult to understand unless you have had the experience.

First, there is the professional development aspect, which occurs in multiple ways. It’s extremely important that exams are graded consistently, because a student’s score should not depend on who graded the questions. For that reason, a multi-page scoring rubric is provided for each question and readers go through extensive training to learn the subtleties of these rubrics.

Although the rubrics are developed initially by the chief reader, they are refined over the four-day period before the scoring starts. A leadership team is assigned to each question with the task of looking at hundreds of student papers and refining the rubric based on the myriad ways students might answer the question. It’s amazing how many ways students can find to answer some of these questions.

All readers work with a partner at first, and then they can consult with that person anytime they are

in a quandary about how to score a question, leading to some fruitful professional discussions.

Additional professional development opportunities are provided through evening events. For instance, one evening program consists of “best practices,” in which participants share ideas that have worked well in their classrooms. Professional Night is held on another evening and usually involves a talk by a distinguished statistician or author of a popular book with a statistics theme.

Why You Should Consider Getting Involved, and How to Do It

The final reason people keep coming back is difficult to describe, but is best illustrated by the many comments I hear about how it feels like a great big family reunion, except you actually like the people at this reunion! The social aspect of the experience is a tremendous draw. But don’t take my word for it! If you are a college professor who teaches the introductory statistics course, consider applying to be a reader. I can’t promise you will have the time of your life, but I can say there is ample data to show you just might! You can apply at <http://bit.ly/1ThefTZ>.

If you would like to get involved in the AP Statistics program in other ways, consider visiting a local classroom or mentoring an AP teacher. Many new and experienced AP teachers would welcome mentoring by an experienced statistician. As one of my presidential initiatives, a group of AP teachers and college professors led by ASA Board member Anna Nevius is developing tools to help make the connection between professional statisticians and AP Statistics students and teachers. Watch this space for more information!

Jessica Utts

ASA LEADERS REMINISCE

Jon Kettenring



James Cochran

In the 17th installment of the Amstat News series of interviews with ASA presidents and executive directors, we feature a discussion with 1997 ASA President Jon Kettenring.

Q You are one of the few statisticians I have met who earned all of her or his degrees in statistics. How did you find this discipline so early in life? Did you intend to major in statistics when you entered Stanford as a freshman, or did something happen during your undergraduate education that led you to major in statistics and study statistics as a graduate student?

A I started out thinking I would major in a branch of engineering, but nothing excited me especially. My junior year, I had the opportunity to study for six months in the Stanford-in-Germany program—probably the most important experience I had as an undergraduate student. After returning, I still needed a major and a plan to graduate. I had dabbled a bit in statistics as I explored industrial engineering. I was intrigued with the idea of dealing with uncertainty. So, in short, I fell into statistics out of curiosity and necessity.

Q You were executive director of several departments at Bellcore and Telcordia Technologies. How did you, with your education and experience in statistics, wind up in these managerial positions? What aspects of your training and experience in statistics were particularly valuable to you in this position?

A A tradition at Bell Labs that carried over to Bellcore and Telcordia was that managers in

Jon Kettenring joined Drew University in 2004 as a fellow in the Charles A. Dana Research Institute for Scientists Emeriti, known as RISE, and has served as its director since 2008. From 1969–2003, he worked in industrial research at Bell Laboratories, Bellcore, and Telcordia Technologies. His primary research focus has been on applied methods for analyzing multivariate statistical data. From 1984–2003, he managed research groups in statistics, economics, computer science, and information analysis at Bellcore and Telcordia. Kettenring also held visiting appointments at the University of Washington, the University of Minnesota, Stanford University, and the University of Michigan. He earned his BS and MS degrees from Stanford University in 1961 and 1962 and his PhD from The University of North Carolina in 1969, following two years in the U.S. Army.

Throughout his career, Kettenring has been especially interested in the infrastructure that supports the statistics profession. He served as president of the American Statistical Association in 1997 and vice president from 1990–1992, chair of the Board of Trustees of the National Institute of Statistical Sciences from 2000–2004, chair of the Committee on Applied and Theoretical Statistics at the National Research Council from 1993–1996, member of the Mathematics and Physical Sciences Advisory Committee at the National Science Foundation from 2003–2006, and chair of the ASA Accreditation Proposal Review Panel from 2008–2009.

In 2005, the National Institute of Statistical Science (NISS) organized The Future of Data Analysis: A Conference in Honor of Jon Kettenring in recognition of his multiple contributions to the profession and NISS. He is a fellow of the ASA and American Association for the Advancement of Science, and, in 2001, he received the ASA's Founders Award.



The two students shown here with Kettenring—Richa Patel (left), an economics and math double major, and Liz Pemberton (right), a physics major and math minor—spent last semester together studying multivariate statistics.

technical areas should have technical backgrounds. That sounds simplistic, but it's really important from a cultural perspective. Also, I enjoyed working with people from different disciplines. So it was natural for me to take on such assignments. They involved managing research groups in economics, software engineering, and other aspects of computer science, as well as statistics. Half the battle in such positions is to listen well and ask good questions—something that is very natural for statisticians. In fact, I believe statisticians often make excellent managers because of the way we think about problems.

Q In 2002, you, Bruce Lindsay, and David Siegmund produced a report on a workshop about the future of statistics that was held at the National Science Foundation (NSF). One focus of this workshop was educational reform, and issues identified included developing adequately trained teachers for AP Statistics courses and ensuring statistical literacy of instructors in other subjects in grades K–12, the need for integrating statistics throughout the K–16 curriculum, and expansion of statistics programs and options at both the undergraduate and graduate levels. Do you think our discipline is making progress in these areas? What activities in these areas have impressed you, and what activities would you like to see undertaken?

A The instigators of the workshop were Marianthi Markatou and John Stufken, who were serving as program officers at NSF. They recognized that

a forward-looking study of statistics—a Vision 2020—was needed at the foundation. It was hinted that, without such a report, our field was at a disadvantage. So the timing seemed right, and fortunately a broad representation of the community was able to participate. Bruce served as chair of the program committee and David, along with several other distinguished statisticians, were members. Following the workshop, I worked with Bruce and David to produce a report of the proceedings. An abridged version of the full report appeared in the August 2004 issue of *Statistical Science*. Writing the report was a lot more difficult than it should have been, and it took considerable time. One of my roles was to pull together the education section you mentioned. As a friend likes to remind me, I had zero qualifications for the task—and he was correct! Nevertheless, the educational reforms we included still feel right to me. If anything, perhaps they are understated. Now that we are in the era of Big Data and data science, there seems to be greater urgency to the opportunities for reforming our entire educational effort.

I would especially underscore the need to invest more heavily in high-school statistics education. I recently suggested doing this as the leading element of a six-pronged plan for developing future leaders. I believe it would help introduce more of the best and brightest students to our field at a young age. You can find more details in *Leadership and Women in Statistics*, which was edited by Amanda Goldbeck, Ingram Olkin, and Yulia Gel and published by CRC Press in 2015.

Q You were associated with the National Institute of Statistical Sciences (NISS) for many years. What was the nature of your involvement? Why did you devote so much time to it?

A I served on the board of trustees for about 10 years and as chair of the board for five. NISS is a very important part of the infrastructure of statistics and has been a leader in cross-disciplinary work since its inception. One of its nicest contributions has been its post-doctoral program. It is also a strong partner with SAMSI [Statistical and Mathematical Sciences Institute]—both are housed in the same building in Research Triangle Park. I was happy to help create the NISS Affiliates Program, which brings together academic, government, and industrial interests under the NISS umbrella. I also enjoyed working with the directors of NISS during that period, Jerry Sacks and Alan Karr, who did so much to nurture and grow the institute to its present stature.

Q You are a fellow and director of the RISE program at Drew University. What is RISE, and what is its mission?

A RISE stands for the Research Institute for Scientists Emeriti. It's a group of researchers from various scientific disciplines who have retired from industry. Our mission is to mentor undergraduates at Drew who want to get involved in research. Most of us worked in either the pharmaceutical or telecommunications sector, both of which have a strong legacy in New Jersey. One of our members, Bill Campbell, recently received the 2015 Nobel Prize in Physiology or Medicine for work he and others did at Merck. Most of our students head to graduate or medical schools after graduation. The RISE program began 35 years ago. More than 400 students have participated. We have a lot of fun together, and it is a great way for retirees to stay active! You can learn more about this program at www.drew.edu/rise.

Q You chaired the committee that developed the ASA report on voluntary individual accreditation of statisticians. What led to the establishment of this committee? How was the ASA's current accreditation program ultimately developed? How did the ASA decide what would be required for accreditation, and what led to the establishment of two levels of accreditation—Accredited Professional Statistician, or PStat, and Graduate Statistician, or GStat?

A Our committee was a follow-up to a previous one chaired by Mary Batcher that recommended the ASA start an optional accreditation program. We took a fresh look at the opportunity, surveyed about 1,000 members, and recommended that the ASA Board launch an optional PStat program. We made this suggestion to a large extent because more than 40% of the respondents indicated they would apply for such a program. The ASA now also offers the GStat program, which we had considered but deferred. We also made recommendations for PStat requirements that mirrored those in the Batcher report. After the board approved our proposal, there was a lot of follow-up work to be done to launch the program and its processes. Iain Johnstone chaired the committee that brought the accreditation concept into practice.

Today, there are more than 350 PStat- or GStat-accredited statisticians. While this is a lot less than 40%, it does emphasize what Sally Morton, ASA president in 2009, said was one of the program's main attributes, namely to provide

a way to serve some of the underserved groups in the association.

I would like to add that the committee I chaired was probably the most effective one of all the ASA committees I served on over the years. While the issue under study was controversial, we managed to approach it in an open-minded way through a series of conference calls. The other members of the committee were Mary Ellen Bock, Roger Hoerl, Nancy Kirkendall, Bob Mason, David Morganstein, Vijay Nair, Bob O'Neill, Len Oppenheimer, and Ron Wasserstein.

Q What were the biggest issues you faced as president of the ASA?

A That's a hard question, especially given it was so long ago—1997! As a board, we dealt with quite a range of issues. One priority that I would label big was to complete, refine, and operationalize a new strategic plan that had been initiated by Lynne Billard in 1996. Its main themes were to enhance the reputation and health of statistics, support professional statisticians, and improve the efficiency of the ASA. Each theme had specific sub-goals, such as getting involved in policy issues. An issue that cut across the plan was how best to deal with the challenges and opportunities posed by electronic technology. We were able to use the plan to guide decision making and set funding priorities throughout the year. David Hoaglin led this effort as chair of the Strategic Planning Committee, and many others were involved on the committee and various specialized task forces.

At a more personal level, a *big* issue I tried to emphasize, as many from our community already fully understood, was the growing intersection of computer science and statistics, the increasing size and complexity of data sets, and what these trends might mean for us. It was for this reason I chose Alfred Aho, a distinguished computer scientist, to be the president's invited speaker at the JSM in Anaheim and why I reiterated the words of John Tucker of the National Research Council in my presidential address at the same meeting that *massive* data problems would be the grand challenge for statistics in the 21st century. Now, nearly 20 years later, I think we can agree he was right on the money—even though massive seems to have been downsized to *big* in the press. For more about these developments, see the 2013 National Research Council report, "Frontiers in Massive Data Analysis," published by the National Academies Press. ■

Price Index Row Costs Statistician Her Job, Yet Again

Graciela Bevacqua says she was sacked in a dispute over her proposed development schedule

“This has to do with my refusal to create a new consumer price index in two months.”

Things had been looking up for Graciela Bevacqua, the former head of Argentina’s official consumer price index (CPI). Having been dismissed from her job in 2007 for refusing to bend to government pressure to tweak the CPI so as to report a low rate of inflation, she found herself back working for the National Institute of Statistics and Census (INDEC) after elections late last year swept a new government to power. Hearing the news in early February, we emailed Bevacqua a handful of questions about her new role and how it felt to be back working for INDEC as technical director. She agreed to the interview, seemingly enthusiastic at the promise of a fresh start for the country’s statistical system. Headlines such as “Fishy Figures” from *The Economist* in September 2014 (econ.st/1R2V0rN) give some indi-

cation of the skepticism with which Argentina’s inflation estimates have been viewed in recent years. A few days later, however, Bevacqua emailed us back: “Sorry to let you know that [they] have separated me from the post of technical director on Monday 15 February,” she wrote. “This has to do with my refusal to create a new consumer price index in two months.” Bevacqua described returning to INDEC to find the CPI “destroyed” by political interference. The decision was taken to redevelop the index from scratch, and she believed she had the government’s backing for this task. “I estimated it would take approximately eight months. The resulting system would have some limitations,” she said, “but it would be a serious and credible measure.”

On 14 January, an INDEC press release explained how CPI data from the Buenos Aires department of statistics and the San Luis provincial bureau of statistics would provide an alternative measure of the country’s inflation rate while development work continued. At the time, INDEC director Jorge Todesca spoke of “a sense of urgency” in having INDEC start generating its own data, but that the agency was committed to a “phased rebuild” of all statistical outputs during 2016. However, Bevacqua said that when orders came to deliver a new consumer price index in two

months, she insisted it would not be “credible” to do so, after which she was removed from her post—a post for which she had given up her job only months before. According to a Bloomberg report (bit.ly/1Xc6WFX), Todesca has since said that the new price index would be ready by the end of the second quarter. Bevacqua, meanwhile, has expressed concern for what this latest development means for her country and the government’s commitment to restoring public trust in statistics—though the immediate task in front of her is to seek work. She will also be hoping for a swift and positive end to a criminal case that has hung over her since 2011. After she was ousted from INDEC in 2007, Bevacqua began producing her own independent measure of inflation. This action, however, led to criminal and civil charges being brought against her by the Argentine government. The two civil charges were cancelled between 2014 and 2015, but the criminal charge remains. The court had made a ruling in Bevacqua’s favor last summer (see *Significance*, October 2015, Page 3), but that ruling has since been appealed. And to think things had been looking up for Graciela Bevacqua. ■

Editor’s Note: This originally appeared in the April 2016 issue of *Significance* magazine and is published here with permission.

MORE ONLINE
Graciela Bevacqua was interviewed by Alicia Carriquiry in the December 2012 issue of *Significance*. The article is now free to read at bit.ly/1QFFMVn.

Presidential Teaching Honoree Shares Perspective on Statistics Education

Nafeesa Owens, PAEMST Program Lead

"If I am to encourage my students to pursue their dreams, I need to back that up by taking risks myself!"

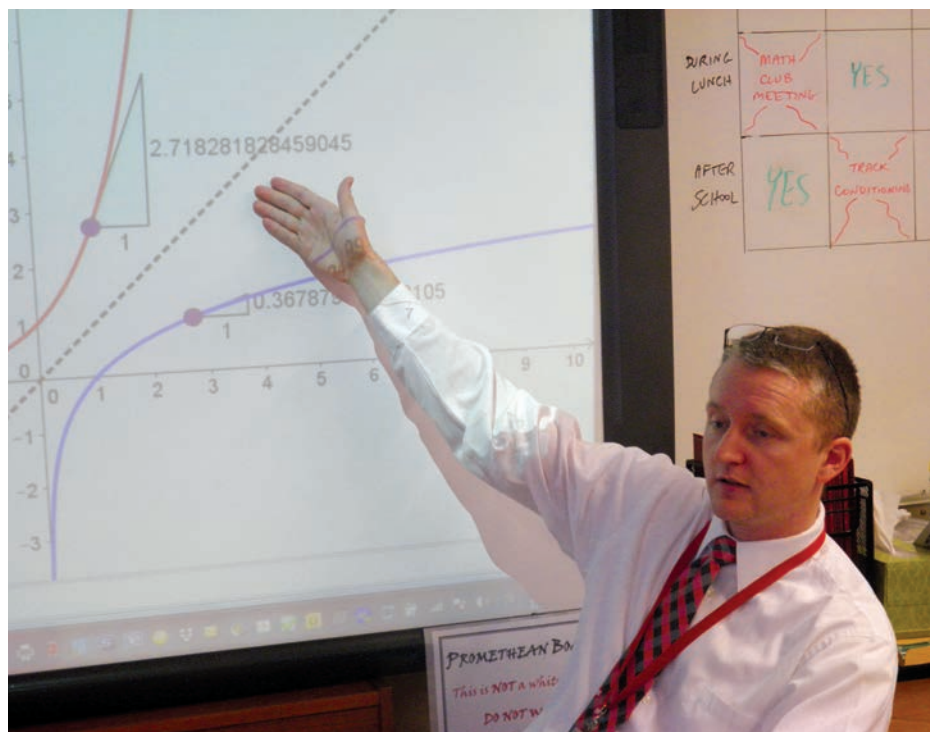
~ Shelby Aaberg

ASA member Shelby Aaberg's risk of applying for the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) paid off when he won the award, received \$10,000 from the National Science Foundation, and traveled to Washington, DC, to meet President Barack Obama in July of 2015.

The mathematics department chair at Scottsbluff High School in Scottsbluff, Nebraska, Aaberg teaches Advanced Placement (AP) Statistics, precalculus/trigonometry, geometry, and problem solving to students in grades 9–12. He credits *Significance* magazine with providing the rich content he uses for his AP Statistics class.

AP Teaching Philosophy

Aaberg bases his AP teaching on the idea that high-school students' brains are still developing and the structures that govern rational decision making are not yet fully formed. He says, "If high-school teachers are to teach



Shelby Aaberg teaches in his classroom at Scottsbluff High School in Nebraska.
Photo by Lindsay Augustyn

college-level content to teenagers, it is in the best interest of all involved to do so with safety nets in place."

For this reason, Aaberg allows his AP students to retake exams for full credit, provided they complete all homework assignments and set up a time to review material with him. Rather than averaging the new test score with the original, Aaberg counts the better of the two. He does not believe in averaging scores and

wants to avoid penalizing students for attempting college-level material. He explains, "Averaging the scores makes absolutely no sense. Do we average attempts at the driver's test? And fail young drivers that pass the sixth time because the other five times were failed attempts?"

Cooperative Assessments

Aaberg is fond of the cooperative assessment technique, in which students are assigned to groups



Shelby Aaberg teaches some of his students.
Photo by Melissa Price

Here are a few examples of the world outside of school exercises he has worked on with his classes:

A school administrator was building a house and wanted his mailbox in a particular location. He bought \$600 in materials before finding out his mailbox location proposal was denied. To solve this problem, Mr. Aaberg's class was asked to propose a new mailbox location that would be approved. His students used Google Earth and GeoGebra to not only find a new path through the neighborhood, but to save the U.S. Post Office a mile per day in driving.

A friend of Aaberg was building a custom car in an area near a municipal water source. The friend needed a 215-gallon oil storage tank made out of cinder blocks. He came to Aaberg's class in need of a solution, and Aaberg's students submitted designs for the storage tank that the friend was able to use.

Aaberg posts a collection of additional problems and projects on his blog at <http://mathleticism.net>. He also recently led a Global Math Department webinar called "Bringing the World Outside School Into Your Math Classroom" that can be found at www.bigmarker.com/GlobalMathDept/Bringing-the-World-Outside-School-Into-Your-Math-Classroom.

and can use all materials but the internet for the assessment. This type of assessment empowers students to peer teach and help other students who may have missed classwork for extracurricular activities. He gives an example of a cooperative assessment, which can be followed using the steps below:

Assign students to five groups, with the top five students in the class being assigned one to each of the five groups.

Provide groups a set time period to work on a problem together as a team.

Allow students to collaborate between the assigned groups for another set period of time.

Use a random number generator to select one student to present the solution to the class.

Allow the audience to disagree or protest the solution provided, and allow the presenter to change his or her answer.

Provide feedback to the student presenter, if necessary.

Grade the entire class on the solution the student presents.

Using cooperative assessments in AP Statistics is not the only unique method Aaberg brings to his classroom, however. He also has a unique philosophy on teaching statistics using real-world examples.

The World Outside

Actually, Aaberg would prefer to call it "the world outside of school," rather than using the term "real-world" in his classroom, as he feels it's a better representation of what he is looking for. He says, "We look for many consulting opportunities within the community in an effort to show kids not just that mathematics is useful in school, but that it is a tool they can use for problems outside school and in optimizing dilemmas for problems that may seem unsolvable."

MORE ONLINE
To learn more about how to nominate a statistics teacher for the Presidential Awards for Excellence in Mathematics and Science Teaching, visit www.paemst.org.



Shelby Aaberg engages his students in a class discussion.

Photo by Lindsay Augustyn

Advice for New Teachers: Teaching Is a Lifestyle

From his unique classroom activities to his numerous accolades—including PAEMST and Nebraska Teacher of the Year awards—Aaberg has a lot to offer educators who are early in their careers. A love of both statistics and students inspired Aaberg to become a math teacher, and he advises new teachers to build strong relationships with students. “When the going gets tough—and it will, as math class can be a frustrating place of productive struggle—the relationship will dictate how hard a kid tries,” he says.

Aaberg advises new teachers to find a mentor to help with the development of content

knowledge. Most of all, he says teaching is a lifestyle and he warns new teachers to not internalize issues from the classroom. He reminds, “It is important for a new teacher to make time for him or herself; put on your own oxygen mask before attending to others!”

What’s Next?

After winning the PAEMST award and taking his wife on the trip to Washington, DC,

“When the going gets tough . . . the relationship will dictate how hard a kid tries.”

Aaberg was offered opportunities to provide input to policy at both the state and national levels. One of his short-term goals is to complete his service as president of the Nebraska Association of Teachers of Mathematics. For the long-term, he hopes to finish his doctorate in the next four years. But most of all, when it comes to his plan for what’s next, Aaberg says it best: “My current plan is to continue doing what I enjoy most—teaching high-school mathematics and statistics.” ■

An Interview with **Steve Fienberg**, 2015 NISS **Jerome Sacks Award** for Cross-Disciplinary Research Winner

The National Institute of Statistical Sciences (NISS) Board of Trustees established the Jerome Sacks Award for Cross-Disciplinary Research in 2000 to honor Sacks' service as the founding director of NISS. The annual prize of \$1,000, presented at the NISS JSM Reception, recognizes sustained, high-quality cross-disciplinary research involving the statistical sciences.

Stephen Fienberg, Maurice Falk University Professor of Statistics and Social Science and codirector of the Living Analytics Research Center at Carnegie Mellon University, was honored with the 2015 Jerome Sacks Award for Cross-Disciplinary Research for "a remarkable career devoted to the development and application of statistical methodology to solve problems for the benefit of society, including aspects of human rights, privacy and confidentiality, forensics, survey and census-taking, and more; and for exceptional leadership in a variety of professional and governmental organizations, including in the founding of NISS."

Jamie Nunnally, NISS's communication director, conducted the following interview.

What got you interested in the field of statistics?

My interests in statistics date to undergraduate courses at the University of Toronto. In my third year, Don Fraser introduced me to the mathematics of statistics and inference issues. Much of what he did was explicitly geometrical, and that had great appeal to me. He also exploited the magical inversion associated with Fisher's fiducial argument, wherein the distribution of the data given the parameter induces a distribution on the parameter given the data. In my fourth year, Dan DeLury taught a course on the design of experiments, and that led me to read Fisher's book on the topic.



Stephen Fienberg

At the same time, I took a research methodology course for psychologists taught by the eminent cognitive researcher Endel Tulving. There I could see how to put much of what I was learning from Fraser and DeLury to work. At that point, I was hooked and began to apply for graduate study in statistics.

Who were some of your influencers?

The department of statistics at Harvard, where I did my graduate work, was quite small, and every faculty member influenced me in some form. Paul Holland was a recent PhD from Stanford, and we worked on things motivated in part by Stein's inadmissibility results, but from a Bayesian point of view. Art Dempster stimulated me to think about foundational inference issues, and Howard Raiffa and John Pratt, who were essentially in the business school, helped to reinforce my Bayesian tendencies. George Tiao, who visited Harvard, also played an important role in my Bayesian education and was an early coauthor. Bill Cochran and Fred Mosteller (who was my thesis adviser and later mentor) were

my role models when it came to making statistics work in real applications, including matters of serious public policy.

Later, when I joined the faculty at The University of Chicago, Bill Kruskal and Paul Meier continued to draw me into diverse areas where statistics could make an impact. Even though Bill and I differed on matters of inference—I was already very much a subjective Bayesian and he was a committed frequentist—he represented for me the statistician as a public intellectual and he reinforced in me the importance of careful scholarship, not just the development of new methodology.

What was one of the first projects you did with the National Institute of Statistical Sciences (NISS)?

Actually, my earliest interactions with NISS came via service on the board, which I joined almost at the outset and on which I served for more than a decade. I pushed quite hard for a focus on developing the kinds of research projects that statisticians would typically not happen upon on the campuses of their own universities. This was before the era of Big Data, but clearly in the spirit of such. And, of course, the watchword was “interdisciplinarity.”

What was your favorite project you did with NISS?

In the 1990s, I had been drawn into working on the statistical problems associated with confidentiality and privacy protection. When Alan Karr and I attended a National Science Foundation (NSF) workshop launching NSF’s digital government initiative, we realized it would be an ideal vehicle to pursue confidentiality and privacy issues of interest to government statistical agencies and develop new methodology drawing together experts from a number of university campuses. The successful proposal we wrote went in from NISS, and it solidified my links to NISS as well as my friendship with Alan. The students and postdocs trained under our grant have gone on to make major contributions to this area of research.

PREVIOUS AWARD WINNERS

2001 Elizabeth Thompson	2008 John Rice
2002 Max Morris	2009 Ram Gnanadesikan
2003 Raymond Carroll	2010 Sallie Keller
2004 Douglas Nychka	2011 Emery Brown
2005 Jeff Wu	2012 William Q. Meeker
2006 Adrian Raftery	2013 Kenneth P. Burnham
2007 Cliff Spiegelman	2014 Terry Speed

What are you working on now?

I continue to work on a multiplicity of statistical problems, all of which involve Big Data and interdisciplinarity: confidentiality and privacy, including record linkage; methodology for census taking; forensic science and the law (including my involvement with the new Center for Statistics and Applications in Forensic Evidence—CSAFE); and network modeling.

What advice would you give someone who is thinking about entering the field of statistics?

I’m reminded a bit about the scene in the 1960s movie *The Graduate*, where Dustin Hoffman in the title role is offered one word of advice: “Plastics!” My one word of advice to someone just entering the world of statistics is “applications.” While statistics has an intellectual core built around probability and inference, I have always drawn my inspiration from real-world problems arising in other disciplines, and that is, of course, where the data we analyze arise. So I tell my students to take applications seriously and to use them to motivate the methodological and theoretical work they choose to do.

Anything else you would like to add?

Statistics is an amazing and challenging field. The opportunities today are limited only by our collective imagination. In some ways, it was serendipity that led me into statistics more than 50 years ago. The ever-expanding interest in statistics by our undergraduates and the demand for statisticians in government, academia, and industry reinforce the importance of thinking and working across boundaries. That is what the NISS Sacks Award is really about and why I was so honored to receive it. ■

MORE ONLINE

To learn more about Jerome Sacks and the award, visit www.niss.org/people/jerome-sacks.

And the Award Goes to ...

Leading statistical groups create prestigious platform to recognize far-reaching contributions

The music and entertainment industries have one, as do professions spanning the areas of international security, medicine, physics, and economics (just to name a few). Now, the field of statistics has an award of its own—the biannual International Prize in Statistics—recognizing a significant achievement by an individual or team in statistics.

A joint effort created by five international statistical societies—American Statistical Association, International Biometric Society, International Statistical Institute, Institute of Mathematical Statistics, and the Royal Statistical Society—the International Prize in Statistics also raises awareness of the invaluable role that statistics, data analysis, probability, and the understanding of uncertainty play in science, technology, human welfare, and the overall advancement of society.

“Statisticians throughout the world actively work behind the scenes growing regional economies, identifying migration patterns, pinpointing causes of public health epidemics, expanding the food supply, creating environmentally friendly waste

management operations, saving endangered species, and developing safer transportation and infrastructure systems. The work statisticians do has the power to transform the world around us, and yet they do not receive the global recognition that is so well-deserved,” said Ron Wasserstein, executive director of the American Statistical Association. “As the global population is estimated to exceed 11 billion in the next century, and the anticipated demand for Big Data experts will create more than four million jobs globally, it is imperative that an international platform exist to honor the dynamic and data-driven men and women of our field whose contributions advance society.”

While the impact statistics has on our daily life is a lasting one, the nomination period won’t be. Submissions must be received by August 15, so don’t delay in applying or nominating a worthy candidate. The winner will be announced this October, and the award of \$75,000 will be presented at the ISI World Statistics Congress in July 2017. Visit statprize.org for nomination requirements and details. ■



MORE ONLINE

The International Prize in Statistics is also on twitter. Follow @StatsPrize to keep up with the global award.

“The winner will be announced this October, and the award of \$75,000 will be presented at the ISI World Statistics Congress in July 2017.”

New Journal Calls for Papers, Strives to Meet Goal

Michael L. Cohen, *Statistics and Public Policy* Editor

In 2013, the American Statistical Association began publishing the open-access online journal *Statistics and Public Policy* in conjunction with Taylor & Francis. The founding coeditors—Sally Morton, David Banks, Dan McCaffrey, and Sharon Lohr—established the goal of publishing papers that examined current public policy issues that require rigorous statistical analysis or insight to fully understand the policy question at hand. Members of the current editorial board hope to continue the progress made in the journal's first two years. Toward that end, we encourage the submission of articles that address local, national, or international policy questions in which the emphasis is on the application, rather than the novelty of the methodology.

The opportunity exists for our profession to provide insight into many important public policy questions for which key aspects can only be understood through the use of a careful statistical analysis or argument. By doing so, not only do we shed new light on important issues of the day, but we also demonstrate the value of our discipline in addressing such issues.

Recent examples for which *Statistics and Public Policy* has provided new clarity are the sensitivity to model form that should limit the role value-added models play in the assessment of elementary- and secondary-school teachers, the

identification of childhood cancer clusters in Florida through the use of spatial clustering, model uncertainty in environmental dose-response risk analysis, the use of various metrics in assessing the difference between two distributions to determine minority representation in jury pools, and the performance of and differences between major political polls in battleground states from 2004 through 2012.

Despite the opportunity our journal provides for the dissemination of such research, we have yet to fully achieve what was envisioned. Our submissions numbers are not yet at a sustainable level. To help build the

submission momentum we need, we hope to increase awareness of this new journal throughout the statistics and affiliated communities. Please visit our webpage at www.tandfonline.com/loi/uspp20#.VwV_ufkrKcM and spread the word.

Statistics and Public Policy is a new journal with an energetic editorial board that can provide helpful editorial assistance and expeditious decision making for authors. We will strive to continue identifying, refining, and publishing research papers that help clarify some of the most vital issues of public policy of the day and, by doing so, also help promote the use of statistics. ■

***Statistics and Public Policy* Editorial Board**

Michael Cohen, National Academy of Sciences

David Banks, Duke University

Georgiy Bobashev, RTI International

Alicia Carriquiry, Iowa State University

Miguel de Carvalho, Pontificia Universidad Católica de Chile

Alan F. Karr, RTI International

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Denise Lievesley, King's College London

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Salil Mehta, Georgetown University

Jasjeet Sekhon, University of California at Berkeley

6000+ Statisticians Expected in CHICAGO

The Extraordinary Power of Statistics

With more than 3,400 individual presentations arranged into approximately 181 invited sessions, 400 contributed sessions, and 500 poster and speed presentations, the 2016 Joint Statistical Meetings will be one of the largest statistical events in the world.

In addition to the 45 parallel sessions taking place during most of the meetings, there are other activities you can add to your program for a fee: Professional Development courses, roundtable discussions, the Career Service, and workshops.

This year, the exhibit hall will be the place to be. The Opening Mixer will take place there, and

we'll also have Spotlight Chicago, which will feature events throughout the week. Moreover, if you are looking for a way to help the local community while at JSM, you'll want to visit IMPACT CHICAGO, also taking place in the exhibit hall. Finally, just outside the exhibit hall, we'll have an art show featuring data artists.

Here are a few more highlights to let you know what to expect. We hope to see you there.

Register for the Joint
Statistical Meetings
at [www.amstat.org/
jsmregistration](http://www.amstat.org/jsmregistration).



FEATURED SPEAKERS

Monday, August 1

10:30 a.m. – 12:20 p.m.

Medallion Lecture

Tracing Pathways of Dependence: How Far Did We Get?

Nanny Wermuth, *Johannes Gutenberg-University/Chalmers University of Technology*



Tracing pathways of dependence to understand development was a main aim of geneticist Sewall Wright when he formulated—a century ago—linear generating processes, represented them by directed graphs, and evaluated the fit to his data. This approach started to be generalized with graphical Markov models in the 1970s, permitting variables of any type, by using the concept of conditional independence and combining directed with undirected graphs. We have now a most suitable subclass, named “traceable regressions,” to model development in ordered single and joint responses together with a set of context variables. A main difficulty was to find special, testable properties of the generated distributions needed to concentrate on conditional dependences in addition to Markov structure. Traceable regression includes linear regressions, generalized linear models, subclasses of structural equations for longitudinal studies, and models for planned and virtual interventions. Here, we use several examples of studies to illustrate and summarize the now available features of traceable regressions and to point at open research questions.

Tuesday, August 2

4:45 p.m. – 6:15 p.m.

ASA Deming Lecture

Profound Knowledge from a Knowledge Use Perspective

Vincent P. Barabba, *Market Insight Corporation*



This presentation will focus on the need to improve the manner in which knowledge developed from statistical practice is presented so that the statistically based knowledge will be effectively used to improve decisions.

8:00 p.m. – 9:30 p.m.

ASA Presidential Address and Founder & Fellows Recognition

Appreciating Statistics

Jessica Utts, *University of California at Irvine*



“Appreciating Statistics” as the title of this talk is meant to convey a two-fold meaning. First, as statisticians, we have much to offer, and we need to make sure the importance of what we do is apparent to a broad range of audiences. Historically, we have not held a visible place of prominence with policy makers, the media, the public, or the wide range of professionals who could benefit from understanding statistical information. We all can play a role in publicizing what statistics has to offer and fostering appreciation for what we do. The second meaning I hope to convey is that the value of a degree in statistics and related fields is appreciating in multiple ways. According to the Bureau of Labor Statistics, “statistician” is projected to have the ninth-highest growth rate from 2014–2024 among all professions and the third-highest growth rate among those requiring a college degree. *U.S. News and World Report* ranked “statistician” as the number-one best business job based on a combination of financial and work-life issues. We need to educate students

and those who help them make career decisions about the many tangible and intangible benefits of a career in statistics and encourage a diverse workforce to meet the needs of our profession. The ASA is implementing multiple initiatives to encourage and advertise both types of appreciation of statistics, but as 2013 ASA President Marie Davidian noted, all of us can play a transformative role in promoting our discipline. Find out how you can help!

Wednesday, August 3

2:00 p.m. – 3:50 p.m.

Medallion Lecture

Model Averaging and Post-Model Selection

Gerda Claeskens, *KU Leuven*



Several choices have to be made such as “which and how many estimators to average over” and “which weights to use.” Data-driven weights can be chosen by minimizing an estimator of the mean squared error. In general, those weights are not unique. We prove there are multiple weight vectors that yield equal model-averaged estimators in linear regression. A restriction to singleton models results in a drastic reduction in the computational cost. If we take into account that the weights are random variables, rather than fixed during selection, we show the averaged estimator is biased, even when the original estimators are unbiased, and its variance is larger than in the fixed weights case. This relates to the “forecast combination puzzle”; there is no guarantee that the weighted averaged forecast will improve on the original forecasts. The distribution of model-averaged estimators is, in general, hard to obtain. We work out the special case of an estimator after model selection by the Akaike information criterion AIC. We exploit the overselection properties of AIC to construct valid confidence regions that take the model selection uncertainty into account.

4:45 p.m. – 6:15 p.m.

COPSS Fisher Lecture

Personalizing Disease Prevention: Statistical Challenges

Alice S. Whittemore, *Stanford University School of Medicine*



The recent presidential allocation of U.S. resources for precision medicine reflects a national focus on personalized health care. Patients and their doctors are increasingly basing such care on statistical risk models that use a person's lifestyle and genetic covariates to assign him or her a probability of developing a disease or other adverse health outcome in a given future time period. The use of such personal risk models will increase as we learn more about the genetic and epigenetic causes of disease, and as the routine sequencing of peoples' entire genomes becomes practical. In this talk, I will describe some of the statistical problems that arise when evaluating the accuracy and utility of these models. These problems would have interested Sir Ronald A. Fisher, who did much of his seminal statistical work while serving as the Arthur Balfour Professor of Genetics at the University of Cambridge.



To Do in CHICAGO: Museum Campus

Val Nirala, ASA Publications Coordinator

McCormick Place is located on the shore of Lake Michigan, about a 20-minute drive from downtown Chicago. For those days when there isn't enough time to venture out that far, there's Museum Campus—a collection of some of Chicago's top sites within 10 minutes.

Chicago's Museum Campus was created after a reconfiguration of Lake Shore Drive in 1998 that tied the major attractions—the Shedd Aquarium, Field Museum, Adler Planetarium, and Soldier Field—together by green space.

FIELD MUSEUM OF NATURAL HISTORY

1400 S. Lake Shore Drive

(312) 922-9410

www.fieldmuseum.org

Open Daily: 9 a.m. – 5 p.m.

Last admission at 4 p.m.

The Field Museum's collection of biological, anthropological, natural, and historical items is one of the largest in the world, with more than 20 million specimens. Sue—one of the museum's most popular attractions—is the largest, most complete, and best preserved *Tyrannosaurus rex* fossil ever discovered.

EXHIBITS INCLUDED WITH GENERAL ADMISSION

SUE—The largest, most complete, and best preserved *Tyrannosaurus rex* fossil ever discovered

EVOLVING PLANET—Four billion years of life on Earth in videos, displays, fossils, land- and seascapes, and a dinosaur hall

INSIDE ANCIENT EGYPT—Egyptian artifacts plus tombs and mummies

RESTORING EARTH—The museum's conservation efforts

THE CROWNE FAMILY

PLAYLAB—A place for children to experience hands-on science

THE ANCIENT

AMERICAS—13,000 years of ancient civilizations, including the Aztec empire

GRAINGER HALL OF GEMS—

Jewels and gold from around the world

THE TSAVO LIONS—Africa's man-eating lions

RONALD AND CHRISTINA

GIDWITZ HALL OF BIRDS—One of the most exceptional collections in the world

DNA DISCOVERY CENTER—How DNA works and tells us about life on Earth

MCDONALD'S FOSSIL PREP LAB—

Scientists prepare fossils for all to see

HALL OF JADES—The story of jade and where it comes from

PAWNEE EARTH LODGE—A full-size replica of a cultural time and place

TRAVELING THE PACIFIC—How one vessel travels the Pacific Ocean

PACIFIC SPIRITS—Ceremonial masks and treasures from Melanesia

AFRICA—Scenes from across Africa

PROJECT HYENA DIORAMA—

Crowdfunded by more than 1,500 supporters



MAORI MEETING HOUSE,

RUATEPUKE I—A sacred place for religious rituals for the Maori people

TICKETS

General Admission

Adults, \$22

Seniors and Students, \$19

Children, \$15

Discovery Pass

(general + one special exhibit)

Adults, \$29

Seniors and Students, \$25

Children, \$20

All Access Pass

(general + all special exhibits)

Adults, \$35

Seniors and Students, \$30

Children, \$24

WANT TO DO IT ALL?

All of Chicago's Museum Campus sites and more are included with the purchase of a **Go Chicago Card** (<http://bit.ly/1dwpPSc>) or Chicago City Pass (<http://bit.ly/1VulnHq>).

SHEDD AQUARIUM



1200 S. Lake Shore Drive
(312) 939-2438
www.sheddaquarium.org
Open Daily: 9 a.m.–6 p.m.

In the early part of the 20th century, millionaire John G. Shedd spent seven years and \$3 million (the equivalent of \$35 million today) to build the Shedd Aquarium. Since then, it has added several exhibits, doubling its size. The centerpiece of the aquarium, the Caribbean Reef, is a 90,000-gallon circular tank filled with stingrays, sharks, eels, a sea turtle, and an assortment of tropical fish. A diver hand feeds the fish and answers questions (while underwater) several times a day.

EXHIBITS INCLUDED WITH GENERAL ADMISSION

CARIBBEAN REEF—A 90,000-gallon circular tank filled with stingrays, sharks, eels, a sea turtle, and tropical fish

WATERS OF THE WORLD—The world's waterways in 90 habitats, with animals such as giant octopus, shrimp, bluegills, and moon jellies

AMAZON RISING—Toxic frogs, huge spiders, piranhas, and an anaconda

EXHIBITS FOR AN ADDITIONAL FEE

POLAR PLAY ZONE—A place for kids to try on a penguin suit and explore Arctic waters in a submarine

AT HOME ON THE GREAT LAKES—Some of the Great Lakes' most notable animals

ABBOTT OCEANARIUM—A recreation of the rain forest of the Pacific Northwest, with animals such as sea stars, otters, dolphins, and beluga whales

WILD REEF—Live coral and more than 24 sharks swimming in a 400,000-gallon habitat

The aquarium also has rotating special exhibits and experiences you can enjoy for an additional fee.

TICKETS

Online

Express Pass—Adult \$54.95,
Child \$45.95

Total Experience Pass—Adult
\$39.95, Child \$30.95

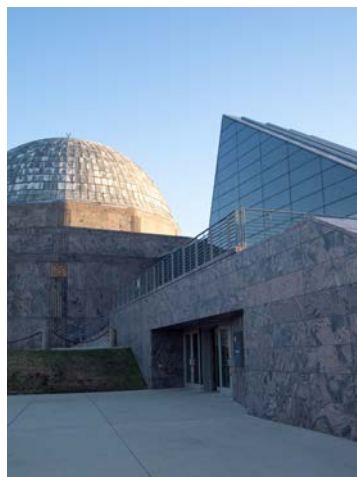
Onsite

Shedd Pass—Adult \$30.95, Child
\$21.95

General Admission—Adult \$8,
Child \$6

Visit www.sheddaquarium.org/plan-a-visit/Advance-Ticket-Options-Tickets for information about what is included with each ticket.

ADLER PLANETARIUM AND ASTRONOMY MUSEUM



1300 S. Lake Shore Drive
(312) 922-7827
www.adlerplanetarium.org
Open Daily: 9:30 a.m.–4:30 p.m.

The Adler Planetarium, founded in 1930 by Max Adler, was the United States' first planetarium. It's also one of the only ones that features two full-size planetarium theaters: the Sky Theater, which has a traditional Zeiss projector, and the StarRider Theater, which allows you to feel as if you are floating in outer space. Additionally, the Doane Observatory showcases a telescope with a 20-inch diameter mirror that gathers 5,000 times more light than the human eye.

EXHIBITS INCLUDED WITH GENERAL ADMISSION

MISSION MOON—America's first steps into space through the eyes of NASA's Captain James A. Lovell Jr. and his family

OUR SOLAR SYSTEM—Make a crater or touch a piece of the Moon, the planet Mars, or a distant asteroid

COMMUNITY DESIGN LAB—

Hands-on activities that challenge you to think about science

THE UNIVERSE: A WALK THROUGH SPACE AND TIME—

Witness how the universe evolved over 13.7 billion years

PLANET EXPLORERS—Prepare for a trip to space by exploring the Earth

TELESCOPES: LOOKING THROUGH THE LOOKING GLASS—

Learn how these light-catching devices helped us discover our universe

CLARK FAMILY WELCOME

GALLERY—Explore space in different ways in this futuristic, constantly changing environment

ASTRONOMY IN CULTURE—

Astrolabes, armillary spheres, and sundials illustrate the medieval European and Middle Eastern conception of the universe

EXHIBITS FOR AN ADDITIONAL FEE

DOANE OBSERVATORY—The Doane telescope can gather more than 5,000 times more light than a human eye, allowing you to see the Moon, planets, stars, and galaxies that are trillions of miles away (*open at select times*)

ATWOOD SPHERE—The night sky over Chicago as it appeared in 1913

SPACE VISUALIZATION LAB—

Experience new interactive and immersive visualizations and attend presentations by astronomers and related researchers

The planetarium also has rotating shows available for a fee.

TICKETS

Anytime All Access Pass

(must be purchased onsite; available until 9 a.m. the day of admission)—Adult \$34.95, Child \$29.95

Basic Pass—Adult \$24.95, Child \$19.95

General Admission—Adult \$12, Child \$8

Visit www.adlerplanetarium.org/visit/ticketing-options for information about what is included with each ticket.

NEXT UP

Tune in next month, when we will tell you a little about Chicago's Chinatown.



SOLDIER FIELD

While not a museum, Soldier Field (www.soldierfield.net) is located on Museum Campus. In fact, the majority of the parking for the campus is located under the stadium and you will pass the Memorial Water Wall—a monument to U.S. veterans—while walking to the Field Museum.

Soldier Field underwent a renovation that was completed in 2003. The new look was controversial, and the National Register of Historic Places eventually stripped the stadium of its landmark designation in 2006.



A WORKSHOP FOR EXPERIENCED TEACHERS

Sponsor: ASA-NCTM Joint Committee on Curriculum in Statistics and Probability

Wednesday, August 3, 2016 | 8:00 a.m. - 4:30 p.m. | Chicago, Illinois

The ASA/NCTM Joint Committee is pleased to sponsor a Beyond AP Statistics (BAPS) workshop at the annual Joint Statistical Meetings* in Chicago, Illinois, August 3, 2016. Organized by Roxy Peck, the BAPS workshop is offered for AP Statistics teachers and consists of enrichment material just beyond the basic AP syllabus. The course is divided into four sessions led by noted statisticians. Topics in recent years have included experimental design, topics in survey methodology, multiple regression, logistic regression, what to do when assumptions are not met, and randomization tests.

Cost

The course fee for the full day is \$50. Please note: Course attendees do not need to register for the Joint Statistical Meetings (JSM)* to participate in this workshop, although there is discounted JSM registration for K-12 teachers available at www.amstat.org/meetings/jsm/2016.

Location

Chicago, Illinois, McCormick Place or nearby hotel (room TBD)

Provided

- Refreshments (lunch on your own)
- Handouts
- Pass to attend the exhibit hall at the Joint Statistical Meetings
- Certificate of participation from the American Statistical Association (ASA) certifying professional development hours
- Optional graduate credit

Registration

More information and online registration can be found at www.amstat.org/education/baps. Registrations will be accepted until the course fills, but should arrive no later than July 15, 2016. Space is limited. If interested in attending, please register as soon as possible.

Questions

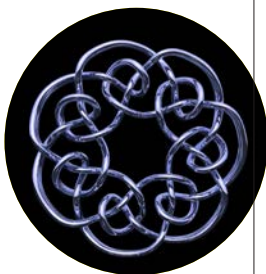
Contact Rebecca Nichols at rebecca@amstat.org or call (703) 684-1221, Ext. 1877

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

NEW THIS YEAR at JSM

DATA ART SHOW

For the first time at JSM, there will be an exhibit featuring data artists positioned just outside the exhibit hall. This new feature will explore the relationship between data and art, which promises to be both amazing and beautiful. Visit www.amstat.org/meetings/jsm/2016/dataartshow.cfm for details. Submissions must be received by May 15.



IMPACT CHICAGO

The ASA is committed to making an impact while we are in Chicago. Impact Chicago, supported by the ASA Chicago Chapter, invites you to participate!

There will be a school supply and book drive for local Chicago schools. Donate books, school supplies, and other necessities appropriate for K–12 students or bring gift cards for teachers to use to supply their classrooms. The ASA will collect these items onsite and make sure they are delivered to local Chicago schools.

Look for details as we get closer to JSM!

MORE TO DO at JSM

DIVERSITY WORKSHOP, MENTORING PROGRAM

The JSM Diversity Workshop and Mentoring Program brings minority statisticians at the early- to mid-career levels together with senior statisticians and faculty in academia, government, and the private sector in a structured program at the annual JSM. This year, the workshop will take place July 31, and the program will take place August 1–3 in Chicago.

The priority deadline for travel funding consideration for the program and mentor matching is May 15. Priority deadline for travel funding consideration is June 1.

Interested statistics students/professionals are encouraged to apply/register on or before July 1. For more information and an application form, visit <http://community.amstat.org/cmisevents/dmp>.

BE A DOCENT

If you have attended three or more JSMs, consider becoming a 2016 JSM docent by following these five easy steps:

1. Make plans to attend JSM 2016.
2. Be willing to answer questions and help first-timers have a positive JSM experience.
3. Attend an orientation session on July 31 and a thank-you reception on August 3.
4. Attend JSM events and invite first-timers to join you.
5. Send your contact information to JSMDocent@amstat.org to receive more information.

Don't Let What Happens at JSM Stay at JSM!

How to get the most out your first Joint Statistical Meetings



Christopher Bilder, University of Nebraska-Lincoln

Christopher Bilder is a professor in the department of statistics at the University of Nebraska-Lincoln. He will be presenting the continuing education course "Analysis of Categorical Data" during JSM. He earned his PhD in statistics from Kansas State University.

The largest congregation of statisticians in the world happens every August during the Joint Statistical Meetings (JSM). More than 6,000 people attend these meetings, which are sponsored by 11 statistical societies, including the American Statistical Association. The meetings offer a variety of activities such as attending research presentations, interviewing for jobs, taking professional development courses and workshops, and browsing the exhibit hall. With so many opportunities, new attendees can be overwhelmed easily by their first JSM experience.

Based on my familiarity with attending meetings over the last 16 years and the experiences of student groups I have led, I'm going to tell you how to get the most out of JSM. If you would like to share your own recommendations, I encourage you to submit a comment at <http://stattrak.amstat.org>.

Before JSM

Most new attendees who choose to present their research do so in a contributed session via an oral or poster presentation. The deadline to submit an abstract for acceptance into the program

was in early February. For those who did this, additional proof of progress (e.g., drafts of a paper) for the presentation must be submitted by mid-May.

A preliminary program listing the presentation schedule is now available at www.amstat.org/meetings/jsm/2016/onlineprogram. Because there may be more than 40 concurrent presentations at any time, it is best to arrive at JSM with an idea of which to attend. This can be done by examining the session titles and performing keyword searches in the online program prior to JSM.

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

Poster presentations are also separated into invited, topic-contributed, and contributed sessions, with the vast majority in contributed sessions. These types of presentations involve speakers being available for questions next to their displayed poster during the entire session. Most posters are of the traditional paper format, but an increasing number now are in an electronic format. This latter format involves a large, high-definition TV that shows all at once or cycles through a small number of slides that would normally be printed on paper. Relatively new to JSM is a hybrid of an oral and poster presentation. The oral poster presentation component begins with a "speed session," in which five-minute presentations are given by each speaker. Later the same day, electronic posters are made available for these same presentations.

Online registration for JSM begins around May 1. For members of a sponsoring statistical society, the cost is \$430 during the early registration period. The cost increases to \$525 if you register at JSM. Registration for student members is only \$105, and this rate is available at any time. Also starting around May 1, you can reserve a hotel room through

the JSM website. A number of hotels near the convention center are designated as official conference hotels, and they discount their normal rates. However, even with a discount, you can expect to pay \$200 or more per night for a room.

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

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

At JSM

JSM begins on a Sunday afternoon in late July. Business casual clothing is the most prevalent attire, but some attendees wear suits and others wear T-shirts and shorts. When you arrive at JSM, go to the registration counter at the convention center to obtain your name badge and conference program book. The program book will contain a map of the

convention center that can be useful for finding session rooms.

There is a significant online presence during JSM. A main resource is the JSM app that contains all the information found in the program book and more. Also, the ASA posts the most up-to-date news about JSM through its Twitter (@AmstatNews) and Facebook accounts. Attendees at JSM can use #JSM2016 to tag their JSM-related posts.

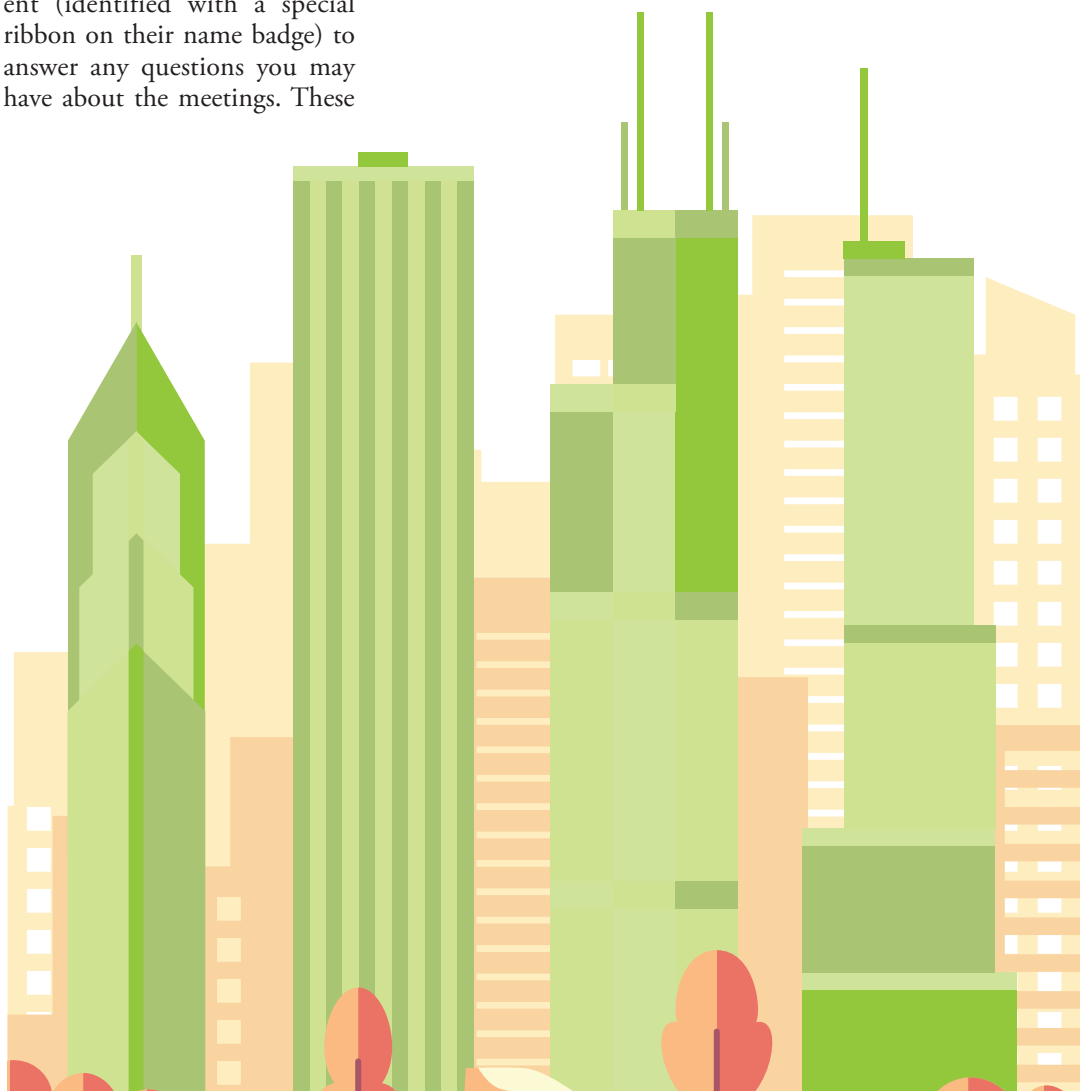
To welcome and orient new attendees, the JSM First-Time Attendee Orientation and Reception is scheduled for early Sunday afternoon. At this reception, docents will be present (identified with a special ribbon on their name badge) to answer any questions you may have about the meetings. These

docents will be available throughout the conference as well.

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

In between the orientation and the mixer, the ASA Awards Celebration and Editor Appreciation session is held. Many first-time attendees are honored during it due to being awarded a scholarship or winning a student-paper competition.

The main sessions start Sunday at 2:00 p.m. Many of the research presentations are difficult to understand completely. My goal



IMPORTANT LINKS

JSM 2016: www.amstat.org/meetings/jsm/2016

First-Time Attendees:

www.amstat.org/meetings/jsm/2016/firsttimeattendees.cfm

Online Program:

www.amstat.org/meetings/jsm/2016/onlineprogram

Job Seekers:

www.amstat.org/meetings/jsm/2016/careerservice.cfm

Professional Development:

www.amstat.org/meetings/jsm/2016/professionaldevelopment.cfm

Student Paper Competitions:

www.amstat.org/sections/studentpaperawards.cfm

for a session is to have 1–2 presentations in which I learn something relevant to my teaching or research interests. This may seem rather low, but these items add up after attending many sessions.

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

Introductory overview lectures are another type of session that has easier-to-understand topics. Recent lectures have included introductions to Big Data, bio-informatics, and complex survey sampling. There are also

many Professional Development courses and workshops available for an additional fee. However, you can attend a course for free by volunteering prior to JSM to be a monitor. Monitors perform duties such as distributing and picking up materials during the course. As an added benefit, monitors can attend one additional course for free without any duties. Those who are interested should contact Rick Peterson at rick@amstat.org.

Featured talks at JSM are usually scheduled for late afternoon on Monday through Wednesday. On Tuesday evening, the ASA presidential address is given, along with a number of awards and an introduction to the new ASA fellows. The fellows introduction is especially interesting because approximately 50 ASA members (<0.33% of all members) are recognized for their contributions to the statistics profession.

In addition to presentations, the JSM exhibit hall features more than 70 companies and organizations exhibiting their products and services. Many exhibitors give away free items (e.g., candy, pens, etc.). All the major statistics textbook publishers and software companies are there. Textbook publishers usually offer a discount on their books during JSM and often for a short time after. The exhibit hall also includes electronic charging stations and tables that can be used for meetings. It's also the location for the poster presentations.

The JSM Career Service provides a way for job seekers and employers to meet. Pre-registration is required, and the fee is discounted if you register before mid-July. The service works by providing an online

message center for job seekers and employers to indicate their interest in each other. Once a common interest is established, an interview can be arranged for during the meetings.

Other activities at JSM include the following:

Shopping at the ASA Store to purchase a statistics-themed T-shirt or mug

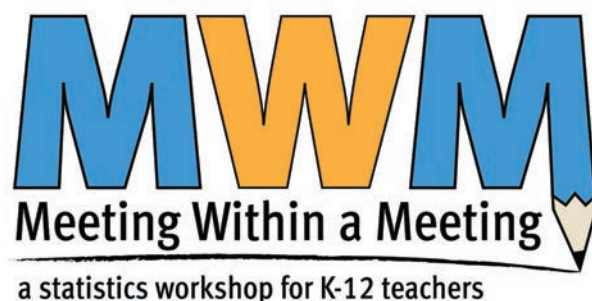
Attending an organized round-table discussion during breakfast or lunch about a topic of interest (pre-registration is required)

Taking a little time off from JSM for sightseeing or attending a sporting event

After JSM

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

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



MWM Statistics Workshop for Middle- & High-School Mathematics and Science Teachers

SPONSORED BY THE AMERICAN STATISTICAL ASSOCIATION (ASA)

www.amstat.org/education/mwm

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

- Dates:** Tuesday, August 2, and Wednesday, August 3, 2016, 8:00 a.m. to 4:00 p.m.
- Place:** Chicago, Illinois, McCormick Place or nearby hotel (room TBD)
- Audience:** Middle- and high-school mathematics and science teachers. Multiple mathematics/science teachers from the same school are especially encouraged to attend.
- Objectives:** Enhance understanding and teaching of statistics within the mathematics/science curriculum through conceptual understanding, active learning, real-world data applications, and appropriate technology
- Content:** Teachers will explore problems that require them to formulate questions; collect, organize, analyze, and draw conclusions from data; and apply basic concepts of probability. The MWM program will include examining what students can be expected to do at the most basic level of understanding and what can be expected of them as their skills develop and their experience broadens. Content is consistent with Common Core standards, *GAISE* recommendations, and *NCTM Principles and Standards for School Mathematics*.
- Presenters:** *GAISE* Report authors and prominent statistics educators
- Format:** Middle-school and high-school statistics sessions
Activity-based sessions, including lesson plan development
- Provided:**
- Refreshments
 - Handouts
 - Certificate of participation from the ASA certifying professional development hours
 - Optional graduate credit
- Cost:** The course fee for the two days is \$50. Please note: Course attendees do not need to register for the Joint Statistical Meetings* to participate in this workshop.
- Follow up:** Follow-up activities and webinars (www.amstat.org/education/webinars)
Networking with statisticians and teachers to organize learning communities
- Registration:** More information and online registration is available at www.amstat.org/education/mwm. Space is limited. If interested in attending, please register as soon as possible.
- Contact:** Rebecca Nichols, rebecca@amstat.org; (703) 684-1221, Ext. 1877

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

Third eCOTS to Focus on Changing with Technology

The 2016 Electronic Conference on Teaching Statistics (eCOTS) will be held online May 16–20. eCOTS is hosted by the Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) during even years and focuses on undergraduate statistics education.

This year's conference theme is "Changing with Technology." Advances in technology provide both

new opportunities and demands when it comes to statistics education. eCOTS 2016 is designed to spark new ideas for how to change with technology, help bring existing ideas to fruition, and provide a forum for us to learn from and engage with each other.

eCOTS 2016 will feature two keynote speakers: Andrew Gelman of Columbia University will give a talk titled "Changing Everything at Once: Student-Centered Learning, Computerized Practice Exercises, Evaluation of Student Progress, and a Modern Syllabus to Create a Completely New Introductory Statistics Course" and Michael Jordan of the University of California at Berkeley will give a talk titled "Computational Thinking and Inferential Thinking: Foundations of Data Science."

eCOTS will also include 18 active half-hour breakout sessions, 34 virtual poster presentations (short recorded videos), three two-hour workshops disseminating the results of NSF-supported projects in statistics education, eight birds-of-a-feather small-group discussions, and five panel discussions focusing on hot topics in teaching with technology, including two invited panels: "Teaching with Simulation-Based Inference" with Nicola Justice, Robin Lock, Allan Rossman, and Chris Wild and "Teaching Data Science" with Nicholas Horton, Jeff Leek, Deborah Nolan, and Andrew Schaffner. In addition to teaching simulation-based inference and data science, topics covered will include teaching a flipped or blended course; teaching with R/RStudio, Minitab, or JMP; teaching online; and "free and simple" ways to incorporate technology into your teaching.

Registration for eCOTS also includes the opportunity to participate in one of nine one-day, face-to-face conferences happening in various regions throughout the country that are designed to build local statistics education communities and integrate with the eCOTS theme of "Changing with Technology."

See www.causeweb.org/cause/ecots/ecots16 for more information and to register. Questions about eCOTS 2016 can be directed to the program chair, Kari Lock Morgan, at klm47@psu.edu. ■

Undergraduates: Applications Wanted for Project Competition

The Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) in conjunction with the American Statistical Association is accepting applications for its seventh annual undergraduate statistics project competition (USPROC).

The purpose of USPROC is to encourage the development of data analysis skills, enhance presentation skills, and recognize outstanding work by undergraduate statistics students.

Cash prizes will be awarded and winners will present their projects; however, all students will have the opportunity to give an e-poster presentation about their project at the second annual electronic Undergraduate Statistics Research Conference (eUSRC) October 21.

There are two main categories for submissions:

- The Undergraduate Statistics Class Project (USCLAP) competition is for undergraduate students taking an applied statistics course(s) at an introductory or intermediate level in which a class project is part of the course work (either required or optional).
- The Undergraduate Statistics Research Project (USRESP) competition is for undergraduate students who conduct either methodological or applied research projects that are statistically related. These projects may include research work from REU research projects, senior capstone research projects, or independent research projects that are not based on a specific course.

All levels of projects for both competitions are encouraged. A project can only be submitted to USRESP or USCLAP—not both.

Visit the competition website at www.causeweb.org/usproc for details. The submission deadline is May 31.

SCIENCE POLICY

Evidence-Based Policy at the U.S. Department of Labor

Demetra Smith Nightingale

I'm pleased to have Demetra Nightingale—the chief evaluation officer for the U.S. Department of Labor (DoL)—as this month's science policy guest columnist. Nightingale describes her office's evidence-based approach for improving the effectiveness of DoL's many programs. The DoL evaluation work is frequently highlighted in the federal government's work to better integrate evidence and rigorous evaluation in budget, management, and policy decisions.

~ Steve Pierson, ASA Director of Science Policy



Demetra Smith Nightingale is the chief evaluation officer for the U.S. Department of Labor. She is responsible for coordinating the department's evaluation agenda and working with all agencies to design and implement evaluations.

The federal government is focused on improving the effectiveness of government by using data more efficiently and conducting rigorous program evaluations to build evidence about “what works.”

The U.S. Department of Labor (DoL) is responsible for workforce development, job training, unemployment insurance, and labor standards enforcement through worker protection programs such as those in the Occupational Safety and Health Administration (OSHA)—which enforces workplace safety laws—and the Wage and Hour Division—which enforces minimum wage and overtime laws.

The evidence-based approach at DoL involves both program evaluation and performance management.

Evaluation and Research

The evaluation emphasis at DoL is led by the Chief Evaluation Office, which coordinates a department-wide evaluation program responsive to overarching policy priorities and goals set forth

in the department's strategic plan. Evaluation and research activities include the following:

- Formal program evaluations using experimental and nonexperimental designs
- Testing new approaches through pilots and demonstrations
- Exploratory quantitative and qualitative analysis
- Capacity-building related to evaluation

Formal experimental evaluations with random assignment to treatment and control groups are common in the workforce development policy area, estimating the net impact of a program or strategy compared to a counterfactual condition representing what the impact would be without the intervention. For example, evaluations are conducted to determine the effectiveness of employment services and job training to identify practices that can be replicated across the public workforce development system and to identify possible efficiencies.

A 2012 experimental study—Impact of the Reemployment and Eligibility Assessment (REA) Initiative in Nevada by Marios Michaelides and coworkers—evaluated strategies to speed the rate at which unemployed workers become reemployed and found that “rapid reemployment is more likely to occur when unemployment insurance claimants receive targeted individualized employment services. The treatment group claimants collected 3.13 fewer weeks and \$873 lower total unemployment benefit amounts than the control group.” These findings suggested the resulting public savings exceeded average program costs by more than four times.

Another net impact evaluation—An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States by Deborah Reed and colleagues—used nonexperimental multivariate modeling to estimate the effectiveness of registered apprenticeships, which provide individuals with long-term training leading to certificates and licenses

in electrician and other trade occupations. That analysis found that “participation in registered apprenticeship was associated with substantial gains in earnings of \$47,000 over a nine-year period following enrollment in the program and \$99,000 over the career of an apprentice.”

The statistically significant positive evidence from these (and other) evaluations has been used to justify expanding the strategies.

Evaluations and statistical analysis of program outcomes also are conducted in worker protection programs, often using program management data in more analytic ways than the program agencies otherwise have resources to do. For example, embedded within a large evaluation of OSHA enforcement activities is a sub-study testing whether targeted mailings to businesses increase requests for free onsite consultations to assess workplace health and safety conditions. Firms randomly assigned to receive the targeted notice were 25% more likely to request the free assistance compared to firms that received regular general information, thus increasing voluntary compliance and deterring injuries.

In addition to formal evaluations and analyses, DoL sponsors surveys on high-priority topics. To better understand the effects of the Family Medical Leave Act (FMLA), nationally representative samples of workers and employers were surveyed about their use of and perspectives about family and medical leave. The findings—as explained by Jacob A. Klerman and his associates in the report “Family and Medical Leave in 2012”—provided useful information to the

federal agencies about how to better inform workers and employers about labor regulations.

A number of capacity-building activities are also underway to improve federal employees’ knowledge about evaluation, including methodological seminars, statistical user groups, and established guidelines for high-quality evaluations. The guidelines are posted on DoL’s evidence-based Clearinghouse of Labor, Evaluation, and Research (CLEAR) website, clear.dol.gov, which includes systematic evidence reviews of evaluations sponsored by DoL or other researchers.

Performance Management

The Performance Management Center (PMC) leads DoL’s performance management activities. The priority goals laid out in the strategic plan are operationalized in annual operating plans for each DoL agency. Through quarterly review meetings with the deputy secretary, the department’s agency heads discuss their agency’s performance progress compared to previously established targets.

Evaluations contribute evidence that feeds into the performance management process through analysis of factors associated with current measures to consider definitional refinements or new measures to more fully capture performance. In one study, management data from workers’ compensation programs were analyzed to identify factors associated with the rate at which individuals return to work after receiving compensation payments because of a work-related injury. Statistical analysis is also examining employment-related services to subgroups such as women,

ethnic minorities, and veterans returning from active duty.

Thus, a culture of evidence is emerging at DoL, due in part to the active, empirically based, and comprehensive program of research and evaluation, consciously linked to management and operations through strategic planning and performance management. Rigorous evaluations help policy makers and administrators understand why public programs may or may not be meeting their goals, the relative effectiveness of different strategies to achieve goals, and how informed evidence can help identify what needs to change to improve results.

The statistical community can play an important role in furthering the progress made in evidence-based policy by sharing the latest statistical techniques with the public policy and evaluation community.

First, the evidence-based climate in the federal government requires that publicly funded evaluations and research—as well as performance measurement—adopt the best methods, including applications for creating appropriate comparison groups, using the most appropriate matching and estimation techniques, or considering external validity when designing evaluations. In addition, access to timely, high-quality, and secure data for research and evaluation purposes is critical.

The statistical community can continue to enthusiastically support federal data and statistical systems and the statistical agencies, which undergird the foundation of evidence-based policy making. ■

Editor’s Note:

The opinions expressed here are those of the author and should not be attributed to the U.S. Department of Labor or the federal government.

STATtr@k

Key Strategies for a Successful Analytics Job Search

If you're getting started in the popular fields of analytics or data science, odds are you're well aware of the attention the quantitative fields have been getting lately. While there are many opportunities for early-career analytics professionals, being well prepared for your job search will save you time and yield the best opportunities.

One of the trickiest parts of being early in your career or a new professional to the field is that many employers are often looking for someone with prior work experience, so anything you can do to give yourself real-world data experience or to make the hiring process smoother will be to your advantage. I put together a previous list of tips (see <http://stat-trak.amstat.org/2015/06/01/10-tips-for-entry-level-analytics-professionals>) for analytics professionals, but here are more job search strategies to help:

1. Write a Concise and Relevant Résumé—Résumés should never be longer than 1–2 pages. Keep irrelevant experience brief (or just eliminate it altogether), and focus on any experience you have that is relevant to the role you're applying for. Describe the effect you've had or projects with real-world data you've worked on, rather than just listing tasks you were responsible for.

2. Have a Professional Social Media Presence—Companies will check your social media profiles before hiring you. Either make sure your presence on those networks is professional, or set all your profiles to private. LinkedIn is a great network to keep track of your professional achievements and make a good first impression to employers, so make sure your profile is complete and up-to-date.

3. Research Potential Employers Before the Interview—I've included this on my lists before, but it bears repeating because it's so incredibly important! Employers want to know you are interested in their company, that you know at least a little bit about what's going on with the company, and hopefully that you've even researched your interviewers on LinkedIn. Being knowledgeable about the company and your interviewers is a great way to stand out and show them you're interested in their job, not just any job.

4. Avoid Being Overly Casual or Presumptuous in Interviews—Save any discussion of benefits, salary, or vacation time for after the first interview. Bringing it up too soon can leave a really bad impression because it makes it seem like you're not even interested in the job or company. Your first goal should be to prove you're the right professional for the role. Interviews are also not the place to experiment and see whether the company culture is open to swearing, offensive jokes, or sweat pants.

5. Follow up After Interviews—This is crucial. It is customary to send each of your interviewers a personalized thank-you note after an interview. Emails are fine, but make sure the notes are pleasant and unique to each recipient.

6. Keep Your List of Target Companies/Areas Open—The more you can keep your list of target companies or geographic areas open, the more opportunities you're going to have. Limiting yourself to only name-brand companies or one city might mean you miss out on a higher salary or more opportunity for advancement.

7. Have Realistic Salary Expectations—Salaries vary widely based on industry, experience, location, and many other factors. To get a better idea of what to expect, I'd recommend checking out Burtch Works' salary studies for Predictive Analytics, Data Science, and Marketing Research professionals at www.burtchworks.com/big-data-analyst-salary/big-data-career-tips/the-burtch-works-study, which are all available for free.

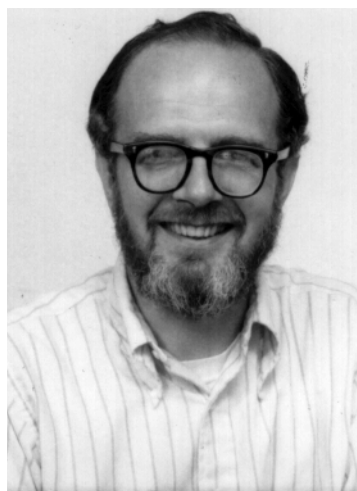
8. Evaluate Growth Opportunities, Not Just Salary—Although salary may be an important factor in your decision, it should not be the only factor. Make sure to take other things into account, such as whether there are growth and learning opportunities and cultural fit. Choosing a job that doesn't have any growth opportunities for a higher salary in the short-term might mean that you will actually earn less in the long-term, so carefully evaluate all aspects of the potential company.

For more information about job searching and the analytics hiring market, be sure to check out the Burtch Works blog at www.burtchworks.com/blog. Best of luck with your search, and make sure to connect with me on LinkedIn! ■



Katie Ferguson spent the last 13 years as a recruiter and human resource generalist. As a specialist in quantitative marketing, she helped launch Burtch Works' mid- and junior-level analytics practice and has been working with analytics professionals for eight years.

William G. Hunter Award Call for Nominations



William Hunter

The American Society for Quality (ASQ) Statistics Division is accepting nominations for its 2016 William G. Hunter Award.

The statistics division established the William G. Hunter Award in 1987 to encourage and promote outstanding accomplishments during a career in the broad field of applied statistics and recognize implementers who get results.

Hunter was the founding chair of the statistics division of the American Society for Quality Control (now American Society for Quality). His leadership as a communicator, consultant, educator, and innovator and his ability to integrate statistical thinking into many disciplines serve as exemplary models for the division's members.

Any outstanding leader in the field of applied statistics, regardless of ASQ or ASQ Statistics Division membership status, is qualified. Candidates must have demonstrated a high level of professionalism, significant contributions to the field, and a history of inspirational leadership. A person may be nominated many times, but can win the award only once.

The nominator must have the permission of the person being nominated and letters from at least two other people supporting the nomination. Claims of accomplishments must be supported by objective evidence. Examples include publication lists and letters from peers. Nominators are encouraged to read "William G. Hunter: An Innovator and Catalyst for Quality Improvement," written by George Box in 1993, at williamghunter.net/george-box-articles/william-hunter-an-innovator-and-catalyst-for-quality-improvement to get a better idea of the characteristics this award seeks to recognize.

Nominations will be accepted until June 30. Those received after June 30 will be held until next year. A committee of past leaders of the statistics division selects the winner, and the award is presented at the Fall Technical Conference in October.

The award criteria and nomination form can be downloaded from <http://asq.org/statistics/about/awards-statistics.html> or obtained from Necip Doganaksoy at necipdoganaksoy@gmail.com. ■

Janet Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences



Janet Norwood, 1989

The department of biostatistics and school of public health at the University of Alabama at Birmingham (UAB) are requesting nominations for the 14th annual Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences.

The honoree will deliver a lecture at the UAB award ceremony on September 14. In addition to the \$5,000 prize, all travel expenses will be covered.

Eligible individuals are women who have completed their terminal degree, have made extraordinary contributions, and have developed an outstanding record of service to the statistical sciences, with an emphasis on both their own scholarship and teaching and leadership of the field in general and of women in particular.

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

Nominations should be sent to David B. Allison at dallison@uab.edu by June 24. Electronic submissions are encouraged. The honoree will be announced by July 4. If selected, the honoree must be willing to deliver a lecture at the award ceremony.

For details about the award, visit www.soph.uab.edu/awards/norwoodaward. ■

Pickard Lecture Call for Nominations

The Harvard University Statistics Department is soliciting nominations for the 2016 Pickard Lecture Award.

This biennial award is funded by the David K. Pickard Memorial Endowment in memory of David Pickard, a professor of statistics. Every two years, the department hosts a lecture and reception to recognize an outstanding university faculty member, who then gives a talk on a topic relating to teaching and pedagogy.

Nominations will be accepted until June 15. All university faculty from outside Harvard are eligible.

Send your nominee's CV and a letter of recommendation to Madeleine Straubel at mstraubel@fas.harvard.edu. You may direct any questions to her, as well.

Additional information about the award and previous winners is available at www.stat.harvard.edu/Site_Content/Pickard_Lecture.html.

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Bhramar Mukherjee

The Washington Statistical Society (WSS) and RTI International chose **Bhramar Mukherjee**, John D. Kalbfleisch Collegiate Professor of Biostatistics at the University of Michigan, as this year's recipient of the Gertrude M. Cox Award.

Since earning her PhD from Purdue University in 2001, Mukherjee has collaborated on more than 100 refereed publications in areas such as Bayesian analysis of data generated under case-control and outcome dependent sampling mechanisms gene-environment interaction. She is

an ASA fellow and served as the 2013 Joint Statistical Meetings Program Committee chair.

Mukherjee will give the Cox Award presentation at RTI International on June 28, prior to the WSS Annual Dinner.

The award was established in 2003 through a joint agreement between the Washington Statistical Society and RTI International to recognize statisticians in early to mid-career (roughly no more than 15 years after terminal degree) who have already made significant contributions to statistical practice.

The award is in memory of Gertrude M. Cox (1900–1978). In 1945, Cox became director of the Institute of Statistics of the Consolidated University of North Carolina. In the 1950s, as head of the department of experimental statistics at North Carolina State College, she played a key role in establishing mathematical statistics and biostatistics departments at the University of North Carolina. Upon her retirement from North Carolina State

University in 1960, Cox became the first head of the statistical research division at the newly founded RTI. She was a founding member of the International Biometric Society (IBS) and, in 1949, became the first woman elected into the International Statistical Institute. She served as president of both the American Statistical Association (1956) and the IBS (1968–1969). In 1975, she was elected to the National Academy of Sciences.

This award is made possible by funding from RTI International, and the recipient is chosen by a six-person committee—three each from WSS and RTI. The award includes a \$1,000 honorarium, paid travel to attend the Cox Award presentation/WSS Annual Dinner, and a commemorative plaque containing the WSS logo. Past recipients include Sharon Lohr, Alan Zaslavsky, Tom Belin, Vance Berger, Francesca Domenici, Thomas Lumley, Jean Opsomer, Michael Elliott, Nilanjan Chatterjee, Amy Herring, Frauke Kreuter, Jerome Reiter, and Jae Kwang Kim. Alyson Wilson. ■

This year's Army Wilks Award winner is **Alyson Wilson**, professor of statistics at North Carolina State University.

The award—established to commemorate the career of Samuel S. Wilks and his service to the Army—is given to a deserving individual who has made a substantial contribution to statistical methodology and application affecting the practice or application of statistics to problems in defense and security.

The Army Wilks Award is given periodically at the Conference on Applied Statistics in Defense (CASD), which was held October 19–22, 2015, at George Mason University in Fairfax, Virginia. ■




The 2016 International Conference on Questionnaire Design, Development, Evaluation, and Testing (QDET2) will take place November 9–13, 2016, at the Hyatt Regency in Miami, Florida.

Details at www.amstat.org/meetings/qdet2

SAVE THE DATE!

Twin Cities Chapter Members Represent Statistics at Career Fair



Chapter members Lindsey Dietz, Thomas Erdahl, and Charlotte Bolch enjoy sharing aspects of their experiences within the field of statistics with students.

Several members of the Twin Cities Chapter volunteered their time on February 27 to talk with high-school students about potential careers in statistics at a career fair in Elk River, Minnesota. This second annual event was held for local students to meet and talk with various career professionals. More than 100 students attended to talk with professionals representing 15 careers.

Chapter members Lindsey Dietz (PhD candidate in the University of Minnesota Statistics Department), Thomas Erdahl (recent statistics MS graduate of St. Cloud State University), and Charlotte Bolch (biostatistician at Chronic Disease Research Group) enjoyed sharing aspects of their experiences within the field of statistics to students.

The chapter members were able to promote the study of statistics and help students understand the many ways statisticians contribute to society through materials from the ASA's "This is Statistics" campaign.

"I felt that we were able to open up many students' minds to the possibility of what a degree in statistics is ..."

"I felt that we were able to open up many students' minds to the possibility of what a degree in statistics is, as well as the wide variety of companies and organizations that are currently in demand for statisticians and data scientists," said Bolch.

The Twin Cities Chapter hopes to represent and promote statistics as a career during the career fair next year. ■

San Antonio Chapter Hosts Statistics Career Day



Daniel Hollas, senior associate dean of The University of Texas at San Antonio College of Business, gives a welcome speech to the students who attended Statistics Career Day on March 5.

In a lab session, students analyze and visualize their own data using R.



To emphasize the significance of statistical and quantitative education in any career path, as well as raise awareness regarding statistics as a rewarding profession, the San Antonio Chapter hosted Statistics Career Day March 5 in collaboration with the TRiO Program and department of management science and statistics at The University of Texas at San Antonio (UTSA).

Students from various local high schools attended the event, which took place at UTSA's main campus. Following a welcome speech by Daniel Hollas, senior associate dean of the UTSA College of Business, students attended interactive lectures and participated in hands-on statistical activities.

The lectures provided a broad view of statistical applications in many fields. Speakers included statisticians from local research, teaching, consulting, business, financial, and insurance organizations such as USAA, Frost Bank, H-E-B, SwRI, UT Health Science Center, and UTSA. Each career-oriented talk offered a brief overview of real-life, day-to-day statistics applications.

Students were also introduced to R, the popular statistical programming language and a leading data science software. In the hands-on lab sessions, they were able to experience the entire process of statistical analysis by importing, analyzing, visualizing, and interpreting their own data.

The students had many interesting questions and fully enjoyed the day-long event, learning about diverse career opportunities in statistics. ■

sectionnews

Biometrics

Edited by Sheng Luo, Biometrics Section Publications Officer

It's time to start thinking about invited sessions for next year's Joint Statistical Meetings, which will be held July 29 to August 3 in Baltimore, Maryland. Anyone who is interested in organizing an invited session or who has ideas for one should contact the section's 2017 program chair, Barbara Englehardt, at bee@princeton.edu.

A typical invited session consists of three 30-minute talks followed by a 10-minute invited discussion and 10 minutes of floor discussion. However, other formats are possible. The 2016 program is a good source for examples.

The most mature ideas will have an advantage in competing for the limited number of slots, so it's best to have your ideas in final form by the middle of June. The Biometrics Section will have at least four invited sessions, but we will be able to compete for additional slots if we generate enough good ideas.

It's also time to submit ideas for short courses to our 2016–2017 continuing education chair, Rosemarie Mick, at rmick@upenn.edu.

For more information about the section's role in JSM 2016, visit <http://magazine.amstat.org/blog/category/membernews/amstatsections/biometrics>.

Funding Opportunity

The Biometrics Section also invites applications for funding to support projects developing innovative outreach projects focused on enhancing awareness of biostatistics among quantitatively talented U.S. students. Of particular interest are projects that will encourage students to pursue advanced training in biostatistics. For more information, visit <http://stattrak.amstat.org/2016/04/01/biometrics-apr16>. ■

Quality and Productivity

The Quality and Productivity (Q&P) Section will offer two invited sessions at JSM 2016. The first session—The Extraordinary Power of Designed Experiments—features presenters from industry, government, and academia and will cover different

aspects of designed experimentation. In the second session—Powerful Experimental Designs for Non-Gaussian Responses—attendees will hear more about different strategies for designs, followed by a discussion.

Q&P is also sponsoring the following three roundtable discussions at JSM this year:

From Statistician to Data Scientist: How to Prepare? – led by Ming Li, REANCON.

Break the Chicken and Egg Cycle: Increasing an Organization's Analytic Maturity – led by Sarah Kalicin, Intel Corporation.

Postdocs in Statistics: No Longer the Unicorn – led by Karl Pazdernik, North Carolina State University ■

Statistics in Epidemiology

The Statistics in Epidemiology Section is beginning a pilot of its new one-on-one mentoring program. Recognizing it can be helpful for junior statisticians to gather feedback and advice from both within and outside of an institution, the section seeks 10 volunteer mentors and 10 volunteer mentees from its membership.

These individuals will be matched and pairs will be notified by June 31. There will be an opportunity for the pairs to meet in person at JSM 2016 in Chicago, and there will be a special occasion for this at the awards ceremony for the section.

Feedback will be gathered by October 1, and a full-scale version of the program will be launched in 2017, if the pilot program proves successful.

Mentees are individuals who wish to grow professionally through a one-on-one professional relationship with a senior statistician as mentor. Benefits include an introduction to the role of a statistician and professional/social contacts with other applied statisticians.

Mentors are supportive individuals who wish to work with a junior statistician and build a long-term relationship by offering guidance, support, and encouragement to cultivate the mentees' career development. We seek applicants with extensive experience in mentoring junior statisticians or graduate students.

A mentor will be matched with a mentee according to the overlap of their research interests. Interested volunteer mentees should complete the form at <http://bit.ly/1SqT6ig> and send a CV to kjablons@bsc.gwu.edu. ■

To list your section's news in *Amstat News*, send an email to Managing Editor Megan Murphy at megan@amstat.org with the details.

Statistics in Defense and National Security

The Section on Statistics in Defense and National Security sponsored the student poster awards at the Conference on Data Analysis (CODA), which was held March 2–4 in Santa Fe, New Mexico. CODA highlights data-driven problems of interest to the U.S. Department of Energy. This year, there were attendees from 10 national laboratories, 20 universities, and a variety of companies.

Poster Award Winners

First prize (\$400) was awarded to Thomas Catanach from Caltech for “Power System Dynamic Estimation.”

Abstract: Because power systems are becoming increasingly complex and subject to disturbances, developing methods for state estimation and system identification is essential for increasing the reliability of the power grid. Currently, this problem is solved on slower, steady-state, time scales; however, faster estimation is now possible with the deployment of phasor measurement units (PMUs). Many methods have been studied for dynamic state estimation, including both local and global filtering methods. One of the main challenges for global methods is how the filter integrates the differential algebraic equations (DAE) that describe the power system. This work applies implicit methods used to solve DAEs to improve the performance and robustness of an extended Kalman filter, making it an attractive state estimation choice. Further, we introduce techniques to reduce the effect of temporary disturbances on the state estimated to help track the state through these faults where the network model is no longer accurate by creating a layered estimation architecture. This architecture integrates state estimation, change point detection, and classification of disturbances.

Second prize (\$100) was awarded to Nicholas Michaud from Iowa State for “A Bayesian Hierarchical Model for Estimating Influenza Severity.”

Abstract: Timely monitoring and prediction of the trajectory of seasonal influenza epidemics allows hospitals and medical centers to prepare for and provide better service to patients with influenza. The U.S. Centers for Disease Control and Prevention’s ILINet system collects data on influenza-like illnesses from more than 3,300 health care provid-

ers and uses this data to produce accurate indicators of current influenza epidemic severity. However, ILINet indicators are typically reported at a lag of 1–2 weeks. Another source of severity data, Google Flu Trends (GFT), is calculated by aggregating Google searches for certain influenza-related terms. GFT data is provided in near-real time, but is a less direct measurement of severity than ILINet indicators and is likely to suffer from bias. We create a hierarchical model to estimate epidemic severity for the 2014–2015 epidemic season, which incorporates current and historical data from both ILINet and GFT, allowing our model to benefit from both the timeliness of GFT data and the accuracy of ILINet data. To forecast for the 2014–2015 influenza epidemic season, we provide our model with both ILINet and GFT data from previous seasons, starting with the 2004–2005 epidemic season and going through the 2013–2014 epidemic season. The hierarchical structure of our model allows ILINet and GFT data from previous seasons to inform epidemic severity prediction in the current season. ILINet data is modeled as being an unbiased but noisy estimate of the true, unknown influenza severity. GFT severity measurements, on the other hand, are influenced by external factors such as media coverage. These factors could consistently bias GFT severity estimates to over- or under-estimate the true epidemic severity, depending on the intensity of media influenza coverage in a season. To account for this potential bias in GFT data, we include a temporally correlated error term that allows over- or under-predictions made by GFT data in one week to carry over into the next. Estimation is performed using the Bayesian statistical software JAGS. We examine the increase in forecast accuracy that GFT data provides by comparing the forecasting ability of our model using both GFT and ILINet data to that of a model given only ILINet data. The two models are evaluated for their ability to predict epidemic severity multiple weeks into the future, and we find that combining up-to-date GFT data with accurate ILINet data improves epidemic severity forecasting ability significantly.

Honorable mentions went to Michael Grosskopf from Simon Fraser University and Ben Newton from The University of North Carolina at Chapel Hill. ■

May

»16–18—39th Annual Midwest Biopharmaceutical Statistics Workshop (MBSW), Muncie, Indiana

For more information, visit www.mbswonline.com or contact Melvin Munsaka, One Takeda Parkway, Deerfield, IL 60015; (224) 554-2846; melvin.munsaka@takeda.com.

23–25—61st Annual Meeting of the Brazilian Region of the International Biometric Society (RBras), Salvador, Brazil

For more information, visit www.RBras2016.org or contact Paulo Rodrigues, Federal University of Bahia, Salvador, International 40170110; +557193749078; paolocanas@gmail.com.

»23–26—UT Summer Statistics Institute, Austin, Texas

For more information, visit stat.utexas.edu/training/ssi or contact Sasha Schellenberg, GDC 7.504, 2317 Speedway D9800, Austin, TX 78712-1823; (512) 232-9217; sasha.schellenberg@austin.utexas.edu.

»*25–27—Spring Research Conference 2016, Chicago, Illinois

For details, visit iit.edu/src2016 or contact Lulu Kang, 10 W. 32nd St., RE-208, Chicago, IL 60616; (312) 567-5322; lkang2@iit.edu.

25–28—12th International Conference on Order Statistical Data, Piraeus, Greece

For details, contact George Iliopoulos, 80 Karaoli and Dimitriou St., Piraeus, International 18534, Greece; +302104142406; geh@unipi.gr.

June

6–10—Statistical Challenges in Modern Astronomy VI, Pittsburgh, Pennsylvania

For details, visit www.scma6.org or contact Chad Schafer, 5000 Forbes Ave., Pittsburgh, PA 15213; cschafer@cmu.edu.

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

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

» Indicates events posted since the previous issue

6–8/12—2016 MBI Undergraduate Summer Research Program, Columbus, Ohio

For more information, visit <http://mbi.osu.edu/education/summer-undergraduate-program> or contact Tony Nance, 1735 Neil Ave., Columbus, OH 43210; (614) 292-4220; tony@mbi.osu.edu.

8–10—SIS 2016 - 48th Scientific Meeting of the Italian Statistical Society, Fisciano, Italy

For details, visit meetings.sis-statistica.org/index.php/SIS2016/home or contact Marcella Niglio, Via Giovanni Paolo II, 132, Fisciano (SA), International 84084, Italy; mniglio@unisa.it.

9–10—International Conference on Nuclear Medicine and Radiation Therapy, Cologne, Germany

For details, visit nuclearmedicine.conferenceseries.com or contact Amelia Johnson, 2360 Corporate Circle, Suite 400, Henderson, NV 89074-7722; (702) 508-5200; nuclearmedicine@conferenceseries.com.

10–11—Advances in Statistics, Probability, and Mathematical Physics: A Conference in Honor of Eugenio Regazzini, Pavia, Italy

For information, visit matematica.unipv.it/eugenioconference or contact Antonio Lijoi, via san Felice 5, Pavia, International 27100, Italy; +39 0382 986220; lijoi@unipv.it.

12–15—The 25th ICSA Applied Statistics Symposium 2016, Atlanta, Georgia

For more information, visit www.math.gsu.edu/~icsa or contact Yichuan Zhao, Department of Mathematics and Statistics, Atlanta, GA 30303; (404) 413-6446; yichuan@gsu.edu.

12–18—AMS Mathematics Research Community on Algebraic Statistics, Snowbird, Utah

For details, visit www.ams.org/programs/research-communities/mrc or contact Tom Barr, 201 Charles St., Providence, RI 02904; (401) 455-4101; thb@ams.org.

13–17—ISBA 2016 World Meeting, Santa Margherita di Pula, Italy

For details, visit www.isba2016.org or contact Michele Guindani, Box 90251, Duke University, Durham, NC 27708-0251; (713) 563-4285; micheleguindani@gmail.com.

»*14–16—2016 Quality and Productivity Research Conference, Tempe, Arizona

For more information, visit qprc2016.com or contact Steven Rigdon, Saint Louis University, Salus Center 481, St. Louis, MO 63103; (314) 977-8127; srigdon@slu.edu.

15–18—Second International Congress on Actuarial Science and Quantitative Finance, Cartagena, Colombia

For details, visit icasqf.org or contact Jaime Londoño, Cra 27 # 64-60, Manizales, International 170004, Colombia; [jalondonol@unal.edu.co](mailto:jalonodonol@unal.edu.co).

19–22—36th International Symposium on Forecasting, Santander, Spain

For information, visit forecasters.org/isf or contact Pamela Stroud, 53 Tesla Ave., Medford, MA 02155; (781) 234-4077; isf@forecasters.org.

***20–23—Fifth International Conference on Establishment Surveys, Geneva, Switzerland**

For more information, visit www.portal-stat.admin.ch/ices5 or contact Polly Phipps, 2 Massachusetts Ave. NE, Washington, DC 20212; (202) 691-7513; phipps.polly@bls.gov.

»22–23—41st Annual SIAS, Provo, Utah

For more information, visit statistics.byu.edu/content/40th-annual-summer-institute-applied-statistics or contact Amy Royer, 223 TMCB, Department of Statistics, Provo, UT 84602; (801) 422-4506; aroyer@stat.byu.edu.

29–7/1—The 2016 International Conference of Computational Statistics and Data Engineering, London, United Kingdom

For more information, visit www.iaeng.org/WCE2016/ICCSDE2016.html or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK; (852) 3169-3427; wce@iaeng.org.

July

»4–8—31st International Workshop on Statistical Modeling, Rennes, France

For details, visit www.lebesgue.fr/content/sem2016-iwsm2016 or contact Jean-François Dupuy, 20 Avenue des Buttes de Coësmes, Rennes, International 35708, France; +33 2 23 23 86 32; jean-francois.dupuy@insa-rennes.fr.

10–15—2016 International Biometric Conference, Victoria, Canada

For details, visit biometricconference.org or contact Dee Ann Walker, 1444 I Street NW, Washington, DC 20005; (202) 712-9049; dawalker@bostrom.com.

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11–12—International Conference on COPD, Brisbane, Australia

For details, visit copd.conferenceseries.com or contact Clara Williams, 2360 Corporate Circle, Suite 400, Henderson, NV 89074-7722; (888) 843-8169; copd@conferenceseries.com.

»11–29—2nd Summer Institute in Statistics for Big Data, Seattle, Washington

For more information, visit www.biostat.washington.edu/suminst/sisbid/register or contact Andrea Hitlin, 4333 Brooklyn Ave. N.E., Seattle, WA 98105; SISBID@UW.EDU.

»11–29—8th Summer Institute in Statistics and Modeling in Infectious Diseases, Seattle, Washington

For details, visit www.biostat.washington.edu/suminst/sismid/register or contact Andrea Hitlin, 4333 Brooklyn Ave. N.E., Seattle, WA 98105; SISMD@UW.EDU.

»11–29—21st Summer Institute in Statistical Genetics, Seattle, Washington

For more information, visit www.biostat.washington.edu/suminst/sisg/register or contact Andrea Hitlin, 4333 Brooklyn Ave. N.E., Seattle, WA 98105; SISG@UW.EDU.

»13–15—International Conference on Applied Statistics (ICAS 2016), Phuket, Thailand

For details, visit icas2016.org or contact Kamon Budsaba, Department of Mathematics and Statistics, Pathumthani, International 12121, Thailand; 66851818740; kamon@mathstat.sci.tu.ac.th.

»25–29—3rd Summer Institute in Statistics for Clinical Research, Seattle, Washington

For details, visit www.biostat.washington.edu/suminst/siscr/register or contact Andrea Hitlin,

4333 Brooklyn Ave. N.E., Seattle, WA 98105; SISCR@UW.EDU.

***30–8/4—2016 Joint Statistical Meetings, Chicago, Illinois**

For details, contact ASA Meetings, 732 North Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org.

August

5–8—SIAM Conference on Uncertainty Quantification (UQ16), Lausanne, Switzerland

For more information, visit www.siam.org/meetings/uq16/?utm_source=ASA_calendar&utm_medium=listing&utm_campaign=UQ16_ASA_calendar_posting or contact Frank Kunkle, 3600 Market St., 6th Floor, Philadelphia, PA 19104; (267) 350-6388; kunkle@siam.org.

»7–10—Ordered Data and their Applications in Reliability and Survival Analysis: An International Conference in Honour of N. Balakrishnan for His 60th Birthday (ODRS 2016), Hamilton, Ontario, Canada

For details, visit odrs.math.mcmaster.ca or contact William Volterman, 215 Carnegie Hall, Syracuse University, Syracuse, NY 13244; (315) 443-1460; odrs@math.mcmaster.ca.

11–13—International Conference on Anatomy and Physiology, Birmingham, United Kingdom

For more information, visit anatomy-physiology.conferenceseries.com or contact Eva Simons, 2360 Corporate Circle, Suite 400, Henderson NV 89074-7722; (888) 843-8169; anatomy-physiology@conferenceseries.com.

13–20—Assimilating Long-Term Data into Ecosystem Models, Land O'Lakes, Wisconsin

For more information, visit www.paleonproject.org or contact Jody Peters, 294 Galvin, Notre Dame, IN 46556; (574) 631-2175; peters.63@nd.edu.

17–19—Small Area Estimation Conference 2016, Maastricht, The Netherlands

For details, visit www.sae2016.nl or contact Bart Buelens, CBS-weg 11, Heerlen, International 6401 CZ, Netherlands; +31455706000; sae2016@cbs.nl.

»18–21—The 2016 International Indian Statistical Association Conference: Statistical and Data Sciences - A Key to Healthy People, Planet, and Prosperity, Corvallis, Oregon

For more information, visit iisaconference.org or contact Subrata Kundu, 801 22nd St. NW, Washington, DC 20052; kundu@intindstat.org.

22–23—5th International Conference on Computational Systems Biology, Philadelphia, Pennsylvania

For more information, visit www.systemsbiology.conferenceseries.com or contact Mark Twain, 2360 Corporate Circle, Suite 400, Henderson NV 89074-7722; (888) 843-8169; systemsbiology@omicsgroup.com.

September

»5–8—RSS 2016 International Conference, Manchester, United Kingdom

For details, visit www.rss.org.uk/conference2016 or contact Tessa Pearson, 12 Errol St., London, International EC1Y 8LX, United Kingdom, 02076143947; conference@rss.org.uk.

»14–16—6th International Conference and Exhibition on Nutrition, San Antonio, Texas

For more information, visit www.nutritionalconference.com or contact Angelina Grace, 611 NW Loop 410, San Antonio, TX 78216; (650) 268-9744; nutrition@insightconferences.com.

»14–15—International Conference on Histochemistry and Cytochemistry, Phoenix, Arizona

For more information, visit <http://histochemistry.conferenceseries.com> or contact Anna Gloria, Phoenix Airport Marriott, 1101 N. 44th St., Phoenix, AZ 85008; (650) 268-9744; histochemistry@insightconferences.com.

***28–30—2016 ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC**

For more information, visit www.amstat.org/meetings/biopharmworkshop/2016 or contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org.

»*30–10/2—AISC 2016 - International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, North Carolina

For more information, visit www.uncg.edu/mat/aisc/2016/index.html or contact Sat Gupta, Department of Math/Stats, 317 College Ave., Petty Building, Greensboro, NC 27412; (336) 554-4608; sngupta@uncg.edu.

October

»*6–7—Fall Technical Conference, Minneapolis, Minnesota

For details, visit asq.org/conferences/fall-technical or contact Shari Kraber, 2021 E. Hennepin Ave., #480, Minneapolis, MN 55413; (612) 746-2035, shari@statease.com.

14–16—International Conference on Statistical Distributions and Applications (ICOSDA 2016), Niagara Falls, Canada

For details, visit people.cst.cmich.edu/lee1c/icosda2016 or contact Felix Famoye, Department of Mathematics, Mt. Pleasant, MI 48859; (989) 774-5497; felix.famoye@cmich.edu.



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»19–21—**International Conference on Machine Learning and Data Analysis 2016, San Francisco, California**
For more information, visit www.iaeng.org/WCECS2016/ICMLDA2016.html or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK; (852) 3169-3427; wcecs@iaeng.org.

20–22—**Women in Statistics and Data Science Conference, Charlotte, North Carolina**
For more information, visit www.amstat.org/meetings/wds/2016 or contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org.

November

9–13—**International Conference on Questionnaire Design, Development, Evaluation, and Testing (QDET2), Miami, Florida**
For more information, visit www.amstat.org/meetings/qdet2 or contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org.

»14–16—**6th International Conference and Exhibition on Metabolomics, Orlando, Florida**
For more information, visit www.metabolomicsconference.com/america or contact Isaac Samuel, Double Tree by Hilton Hotel Orlando Airport, 5555 Hazeltine National Drive, Orlando, FL 32812; (702) 508-5200; metabolomics@conferenceseries.net.

December

*4–9—**72nd Annual Deming Conference on Applied Statistics, Atlantic City, New Jersey**
For more information, visit www.demingconference.com or contact Walter Young, 16 Harrow Circle, Wayne, NJ 19087-3852; (415) 819-8884; demingchair@gmail.com.

6–8—**The 15th Conference of International Association for Official Statistics (IAOS), Abu Dhabi, United Arab Emirates**
For details, visit www.iaos2016.ae or contact Kris Olarte, 9F Dubai World Trade Centre Building, Sheikh Zayed Road, Dubai, International 124752, United Arab Emirates; +971 4 311 6359; kris.olarte@mci-group.com.

»15–17—**Conference on Experimental Designs and Analysis (CEDA) 2016, Taipei, Taiwan**
For details, visit www3.stat.sinica.edu.tw/ceda2016 or contact Frederick Kin Hing Phoa, 128 Academia Road Section 2, Nangang District, Taipei, International 115; (886) 2-6614-5645; fredphoa@stat.sinica.edu.tw.

2017

January

»24–26—**International Conference on Computational Mathematics & Statistics (ICCMS-2017), Banasthali, Rajasthan, India**
For more information, visit www.iccms2017bu.in or contact Shalini Chandra, Department of Mathematics and Statistics, Tonk, Bansathali, International 304022, India; chandshalini@gmail.com.

February

*23–25—**2017 American Statistical Association Conference on Statistical Practice, Jacksonville, Florida**
For more information, contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org.

June

»20–23—**The 10th International Conference on Multiple Comparison Procedures, Riverside, California**
For details, visit www.mcp-conference.org or contact Xinping Cui, 1337 Olmsted Hall, University of California at Riverside, Riverside, CA 92521; (951) 827-2563; xinping.cui@ucr.edu.

July

»3–7—**IWSM 2017, Groningen, The Netherlands**
For more information, visit iws2017.webhosting.rug.nl or contact Marco Gzegorczyk, Nijenborgh 9, Groningen, International 9747 AG, Netherlands; +31503633985; m.a.grzegorczyk@rug.nl.

»9–13—**38th Annual Conference of the International Society for Clinical Biostatistics, Vigo, Spain**
For details, visit jacobowebs.uvigo.es/Flyer_ISCB38.pdf or contact Jacobo de Uña Álvarez, University of Vigo, Department of Statistics and OR, Vigo, International 36310, Spain; 986812492; jacobo@uvigo.es.

*29–8/3—**2017 Joint Statistical Meetings, Baltimore, Maryland**
For more information, contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; meetings@amstat.org. ■

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

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

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

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.

California

■ The University of California at Riverside (UCR) is embarking on a major new hiring initiative that will add 300 tenured and tenure-track positions in 33 cross-disciplinary areas selected through a peer-reviewed competition (for more information, visit www.clusterhiring.ucr.edu). This announcement aims to fill two of an eventual three positions in the area of Business Analytics with a desired start date of June 30, 2016. EOE.

Florida

■ Located in the medical city in Orlando, FL, the University of Central Florida College of Medicine (UCF-COM) is seeking applicants for either a tenure track or non-tenure track (multi-year) appointment in the College of Medicine, working primarily in the Burnett School of Biomedical Sciences, for the position of biostatistician. Please apply at www.jobswithucf.com/postings/44569 EOE.

Illinois

■ University of Illinois at Urbana/Champaign, Interdisciplinary Health Sciences Initiative, Senior Biostatistician. The Interdisciplinary Health Sciences Initiative, formed to catalyze health sciences-related activities on campus and with clinical partners, is seeking a senior biostatistician, whose primary responsibility is to manage the University of Illinois's Biostatistical Core and to provide expert biostatistical guidance to the clients of the core. Visit: <https://jobs.illinois.edu> for more information. University of Illinois is an equal opportunity employer.

Iowa

■ The College Board, the national educational organization, is conducting a search for a senior assessment specialist who will assist in the development of new assessments and related products that support significant segments of the organization with respect to math assessment. This position reports to a senior director and is resident in our Iowa City office. Apply Here: www.Click2apply.net/sn9shdmb85 EOE.

Kentucky

■ Lecturer or senior lecturer in statistics, beginning 8/15/16. Primary responsibility will be teaching in our new online master of applied statistics program or online undergraduate courses. Email (statjobs@uky.edu) CV, teaching statement and have three letters of reference sent electronically. Visit our website at <http://stat.uky.edu>. Position subject to budgetary approval. Required: PhD in statistics, biostatistics, or related field. To enrich education through diversity, the University of Kentucky is an affirmative action, equal opportunity employer.

Massachusetts

■ The Survey and Data Management Core (SDMC) in the Division of Population Sciences at the Dana-Farber Cancer Institute (DFCI) seeks a PhD-level Survey Methodologist with expertise in research and survey design and psychometrics. Quantitative psychology, educational measurement, psychometry, or closely related field, with expertise in survey design and psychometrics EOE.

Ohio

■ The Department of Quantitative Health Sciences at the Cleveland Clinic is recruiting for faculty and master's-level biostatisticians and statistical programmers. Details for all positions, as well as application instructions, are on our website: www.lerner.ccf.org/qhs/jobs. EOE.

Texas

■ Assistant/associate professor level: The University of Texas Health Science Center at Houston, UTHealth, School of Public Health, Austin regional campus, invites applications for a tenure-track faculty position in the department of biostatistics. Full details and to apply, visit requisition #161643 at <https://jobs.uth.tmc.edu/applicants/Central?quickFind=109371>. Please include a cover letter, CV, and contact information for three professional references. Only applications received through the online system will be considered. UTHealth is an EOE/AA employer. UTHealth does not discriminate on the basis of race, color, religion, sex, sexual orientation, national origin, age, disability, genetic information, gender identity or expression, veteran status or any other basis prohibited by law or university policy. EOE/M/F/Disabled/Vet.

■ Assistant/associate professor level: The University of Texas Health Science Center at Houston, UTHealth, School of Public Health-Austin regional campus, invites applications for a tenure-track faculty position in the department of biostatistics. Full details and to apply, visit requisition #161643 at <https://jobs.uth.tmc.edu/applicants/Central?quickFind=109371>. Please include a cover letter, CV, and contact information for three professional references. Only applications received through the online system will be considered. UTHealth is an EOE/AA employer. UTHealth does not discriminate on the basis of race, color, religion, sex, sexual orientation, national origin, age, disability, genetic information, gender identity or expression, veteran status or any other basis prohibited by law or university policy. EOE/M/F/Disabled/Vet.

BIostatisticians | Senior Staff and Non-Tenure Track Faculty Positions

The Division of Biostatistics and Bioinformatics of the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, founded in 1988, is a leader in statistical applications in cancer research. We conduct methodologic research in biostatistics and bioinformatics to advance cancer research, provide biostatistics and bioinformatics support to medical investigators in cancer and other biomedical areas, and teach research methodology in a wide variety of academic programs in the Johns Hopkins Schools of Medicine and Public Health. The Division currently has 16 doctoral-level and 6 masters-level biostatisticians or bioinformaticians and has strong research connections with the Departments of Biostatistics and Epidemiology in the Bloomberg School of Public Health. Please visit our website: www.cancerbiostats.onc.jhmi.edu

Principal Biostatistician: We are recruiting a PhD or MS-level biostatistician to work with Division faculty on collaborative biomedical research. The position requires a doctorate or master's degree in biostatistics, statistics, or a related field and at least eight (8) years of experience in biomedical study design and analysis, preferably in oncology. Strong written and oral communication skills are necessary, as is experience with a range of statistical software.

Assistant Research Biostatistician: We are recruiting a PhD-level biostatistician to collaborate with Cancer Center investigators on biomedical research projects. There are also opportunities to develop new

methodology. The position requires a doctorate or master's degree in biostatistics, statistics, or related area and at least ten (10) years of experience in biomedical study design and analysis. Strong written and oral communication skills are necessary, as is experience with a range of statistical software.

Both positions will expand a highly successful group of quantitative scientists working collaboratively with both clinical and basic science faculty in the Johns Hopkins School of Medicine.

Application Procedure: Applicants should send a Curriculum Vitae (including personal website URL if available), letter of application, and two or more letters of reference to:

For electronic communication: OncBioSearch@jhmi.edu

For paper communication:

Search Committee

Division of Biostatistics and Bioinformatics
550 North Broadway, Suite 1103
Baltimore, MD, 21205-2013

Applications will be considered until the positions are filled.

The Johns Hopkins University is an Equal Opportunity/Affirmative Action employer. We strongly encourage qualified women and under-represented minorities to apply.



International

■ SUNY Korea, a global campus of Stony Brook University, seeks applicants for two tenure-track faculty positions starting Fall 2016. Qualifications: American education experience; fluent English; PhD in mathematics, statistics, or a related field. To apply: send the following items to hongshik.abn@stonybrook.edu: cover letter, CV, teaching statement, and list of three references. Applications will be accepted until the position is filled. Websites: www.sunykorea.ac.kr or www.ams.stonybrook.edu EOE.



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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.

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In honor of Mathematics Awareness Month, we asked our followers to tell us what they think the next big statistics trend will be.



Ryan Carr undoing all the damage done by "Data Scientists" who don't understand the concept of quantifying uncertainty?



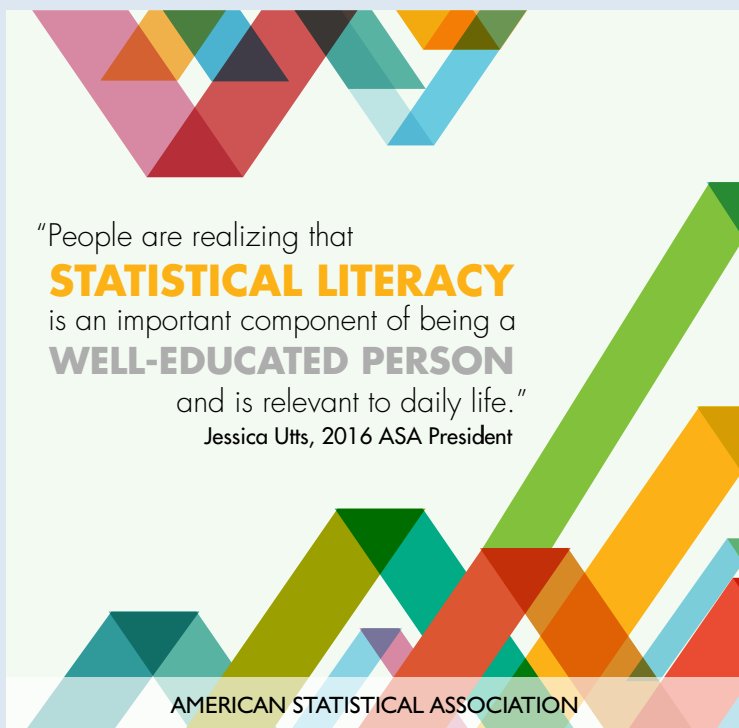
Melinda Higgins

@mhiggins2000

More common modeling practices using variance as a predictor or as an outcome or both.

This month, we'll ask our readers to think back in time and tell us where their student-self thought they would be now. Follow us to read the responses or send us one of your own. Don't forget to tag @Amstat News.

We posted this quote on social media and received several comments. Here is what some of our followers had to say:



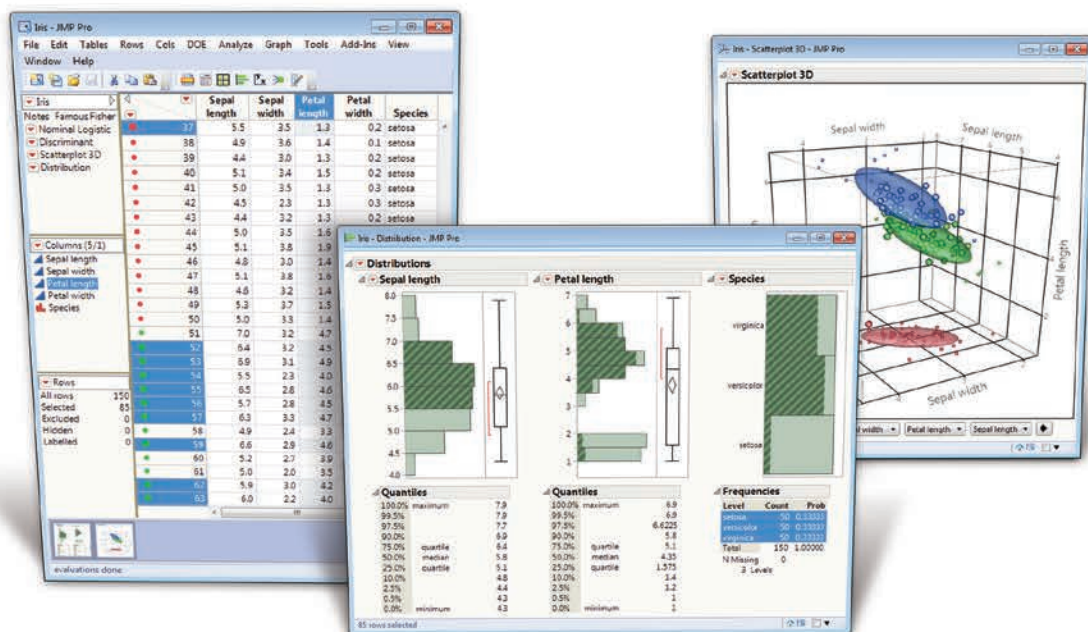
Susan Duke Well educated, yes! And it makes people less prone to those with their own agenda. How can we make statistical literacy relevant to people's lives and put some fun in it too? #letsdoourselvesafavor

Anicet Yalaho Sure, generalizing statistical literacy will enable everyone to understand as well the downside of statistical tool -Manipulation



Sally Morton @sallycmorton

Statistical and data literacy are essential for everyone



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Statistics

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SAS/STAT 14.1 Highlights

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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

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

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