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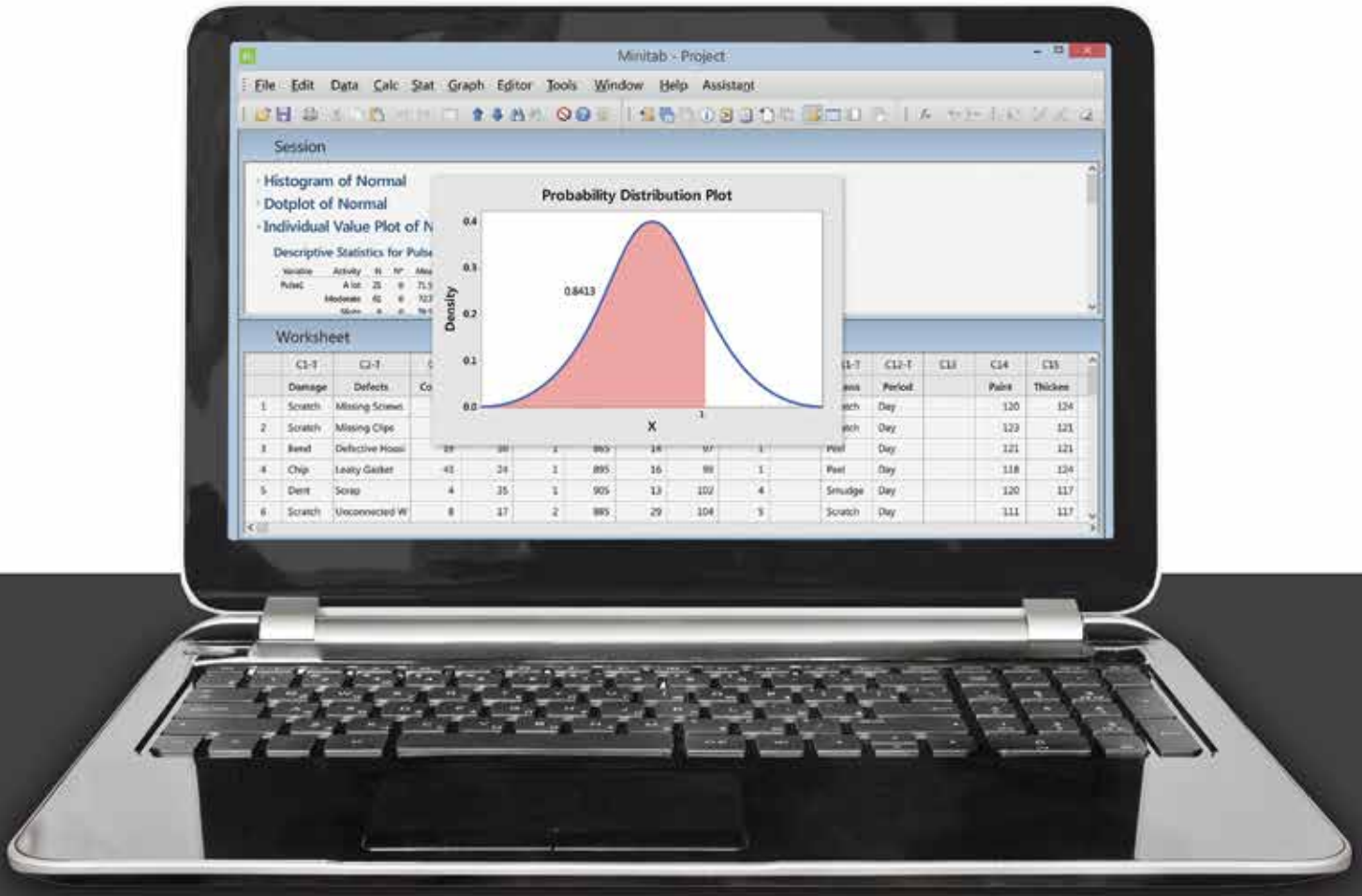

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AMSTATNEWS

JULY 2017 • ISSUE #481

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Invited Session Proposals Sought for JSM 2018 which will be in Vancouver, British Columbia, Canada. See page 30

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To Ask or Not to Ask? It Depends on the Question

Barry D. Nussbaum

It is no secret that response rates for all types of surveys have been plummeting. There have been many useful articles concerning ways to increase response rates, but I tend to focus on the actual questions themselves. I know focus groups are supposed to ferret out concerns about wording that might lead respondents to interpret a question differently from what the survey-taker had in mind or, even more concerning, dump the survey altogether thereby adding to the nonresponse rate. But I just don't think enough emphasis is placed on the basic questions.

In my many years of serving as chief statistician of the U.S. Environmental Protection Agency, I had plenty of opportunities to interact with staff developing questionnaires for surveys. My favorite question for them was, "Can you answer your own question?" You should have seen the looks on their faces as they answered my query with some lengthy paragraph. I interpreted that as a "no."

But, first, one of Nussbaum's life observations: "Smart people cannot fill out forms." I think smart folks overthink the forms, trying to figure out "what is really meant," rather than just answering the question. Let me give two examples.

I am always fascinated by the U.S. Customs form to be filled out as your international flight is approaching the United States. It asks you to fill out "number of family members traveling with you." It goes to great lengths to define who a family member is, but it leaves it totally up to you to determine whether the number of family members traveling with you includes you or excludes you. While the plane is maneuvering toward a landing, I have seen many well-dressed, prominent-looking folks lean over to ask others what they think. (Yes, I know I am assuming well-dressed folks are educated and smart. One strike against me for profiling.) To me, it doesn't matter too much. When you get in front of the Customs and Immigration officer, he or she can surely count how many people are in your party. They will not toss you out for getting that one wrong.

However, my all-time favorite involved my late wife, Debbie. She was quite well educated—a PhD in psychology—and quite smart and clever. (No comments about how smart one can possibly be to have married me!) Anyhow, it was the time of JSM 1994 in Toronto. I arrived in Toronto earlier than Debbie to take some courses. Debbie flew with the kids to Chicago, where they could be spoiled by their aunt and uncle while we were in Canada. As a dutiful husband (with a rental car), I drove to the Toronto Airport to pick Debbie up once she arrived. Waiting outside the customs area, I saw many other passengers from the Chicago flight … but no Debbie.

Finally, a very red-faced wife appeared. Given the customs card on the plane, she noted it was in French. Being smart and knowing Spanish, she assumed she could work her way through the French. She was also assisted by the fact that her birthday was May 5, thus it would be 5/5 no matter whether they used the month first or the date first convention. (What is the probability of such good fortune?) So she filled out the form.

Upon arrival in Toronto, you have a choice to go to either the English-speaking or French-speaking officials. Naturally, she joined the English-speaking line. When she got to the officer, he took one look at the form and in

his best French-accented English said, "Madame, the other side!"

Now, I have some common concerns about surveys I would routinely express. In fact, I would quiz the staff on the following before we launched a survey:

- Is there a good reason the respondent would want to answer the survey?
- Is there something in it for the respondent, or is the respondent just doing you a favor?
- Is the survey too long?
- Have you only asked questions you really need answered?

These queries helped, but somehow my main concerns always returned to the questions themselves.

What do other experts say about all this? I started with that survey-taker of great prominence: Survey Monkey. To their credit, they have listed tips to enhance survey respondent participation. Addressed are such topics as survey design and analysis considerations and email invitation considerations. Within the email invitation considerations, there is a section about considering message content. But rather than focusing on the questions, they discuss the invitation message and give tips for avoiding spam, personalizing the message, using a professional reply email address, etc.

Another piece of advice comes from Ross Beard of Client Heartbeat. Truthfully, I know nothing about Client Heartbeat, but it does come up when you search "low response rates" on Google. One of Mr. Beard's reasons for low response rates is, "You are not asking the right questions." Ah, a person who thinks as I do.

However, Mr. Beard immediately says this doesn't happen too often since the majority of (Client Heartbeat's) customers use the crowd-sourced recommended questions related to their industries. He adds, "The reason why we recommend certain questions is because we've done research into what questions bring about the best responses." Whoops, I guess I shouldn't suggest my own questions.

Finally, I found a kindred spirit. In the May 17, 2017, edition of *The Wall Street Journal,* I noticed Alexandra Samuel's article, "Nine Survey Questions for People Who Create Survey Questions." Now that caught my eye. She began her article with, "I have a message for the survey creators of the world: I'm tired of answering your questions. In particular, I'm tired of online surveys that are too complicated, too cumbersome, and too annoying." Her questions for survey designers include the following:

- Why are you sending me a survey?
- Don't you know this already?
- Would you be able to answer this question?

(For that one alone, I will renew my subscription to the *WSJ*).

Then there is the problem of asking questions when you don't really use the results at all. An interesting example of this is the Federal Employee Viewpoint Survey, administered by the U.S. Office of Personnel Management. The survey has a whopping 84 questions, yet most attention appears centered on the "global satisfaction" score derived from only four of these questions, each equally weighted:

"I recommend my organization as a good place to work."

"Considering everything, how satisfied are you with your job?"

"Considering everything, how satisfied are you with your organization?"

"Considering everything, how satisfied are you with your pay?"

A non-government group, the Partnership for Public Service, publishes an annual "Best Places to Work in the Federal Government" list. They use a proprietary weighting of only three of the measures (omitting the pay satisfaction question).

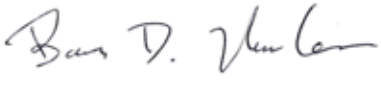
To give the Office of Personnel Management proper credit, analyses are done on all 84 questions, but the headlines always come from the four global measures. My concern is why they don't divide it into a long survey and short survey as the Census Bureau did years ago and give the four questions to all employees and the full 84 questions to just a subset of the employees. I am sure this would increase the response rate for the short survey and probably not change any conclusions for the long one.

So I have questions about questions. Some questions are just hard or misleading to answer on surveys.

This column will be published as many of you are preparing to attend the Joint Statistical Meetings in Baltimore. You may have questions about the ASA. Please feel free to introduce yourself to me and ask me your questions. In that context, there are no stupid questions. I look forward to meeting you.

Significantly forward,

Barry



Karen Kafadar Elected ASA President

Jill Talley, Public Relations Manager

Karen Kafadar, chair and commonwealth professor in the department of statistics at the University of Virginia (UVA), has been elected the ASA's 114th. She will serve a one-year term as president-elect beginning January 1, 2018; her term as president becomes effective January 1, 2019.

The ASA membership also elected Katherine Monti, formerly chief statistical scientist at Rho, as ASA vice president. Monti's term also begins January 1, 2019.

"Complex problems—such as detecting emerging epidemics, ensuring food safety, protecting communications and other infrastructure networks, and establishing overall reliable standards—cannot be solved by single individuals. Statisticians are critical components of teams that address problems in academia, industry, and government, yet, all too often, their involvement arises by serendipity," said Kafadar. "I'm eager to serve as ASA president in 2019 and look forward to engaging ASA members and the broader statistical community to expand efforts that will forecast areas of change, inspire the next generation of statistical thinkers, and generate diverse opportunities for professionals to grow collectively and in their specialty."

In her current role, Kafadar's research interests focus on robust methods; exploratory data analysis; characterization of uncertainty in the physical, chemical, biological, and engineering sciences; and methodology for the analysis of screening trials, which includes awards from the U.S. Centers for Disease Control and Prevention, the ASA, and the American Society for Quality.

Prior to her faculty appointment at UVA, Kafadar was a mathematical statistician at the National Institute of Standards and Technology; member of the technical staff at Hewlett Packard's RF/Microwave R&D Department; fellow in the Division of Cancer Prevention at the National Cancer Institute; professor and Chancellor's Scholar at the University of Colorado-Denver, and Rudy Professor of Statistics at Indiana University.

Kafadar's professional accomplishments and activities are vast. She currently serves as the biology and genetics editor for *The Annals for Applied Statistics* and previously was editor of the *Journal of the American Statistical Association's* Review Section and *Technometrics.*

Additionally, she chairs the ASA's Committee on Statistics in Forensic Science, serves on the Forensic Science Standards Board, and is active on National Academy of Sciences committees. She is a fellow of the ASA, American Association for the Advancement of Science, and International Statistical Institute; has authored more than 100 journal articles and book chapters; and has advised numerous graduate students.

She earned her PhD in statistics at Princeton University and both her master's degree in statistics and bachelor's degree in mathematics from Stanford University.

Katherine Monti was highly regarded throughout her career, which spanned academia, industry, medical devices, and pharmaceuticals. For 18 years, she worked at Rho, Inc., a contract research organization providing clinical research throughout the drug development process. Prior to that, she served as associate director at Astra Pharmaceuticals, senior statistician at Ciba Corning Diagnostics, senior statistician at Ralston Purina, and assistant professor in the department of mathematical sciences at the University of Missouri-St. Louis.

Kafadar

Monti

Some of Monti's major statistical activities have been in the field of clinical trials, applications to veterinary medicine and food science, and design of experiments. Additionally, she has worked on two legal cases, one regarding salary discrimination and another regarding false advertising. In mentoring colleagues, she taught by case-study example, emphasizing both statistics and situation management, which left a lasting impression on coworkers and students who came to appreciate the unique stories she shared.

Monti is an ASA fellow and served as the Council of Chapters Representative to

the ASA Board and as a board representative on the Council of Chapters Governing Board. She has held several committee and section appointments, including on the Committee on Fellows, Advisory Committee on Continuing Education, Biopharmaceutical Section, and Committee on Law and Justice Statistics. Her involvement with the ASA Boston Chapter spanned several officer positions, and she was also a member of the North Carolina Chapter.

The ASA membership also elected the following:

Katherine Halvorsen, professor of mathematics and statistics, Smith College, as the Council of Sections Representative to the ASA Board

Don Jang, vice president and director, Center for Excellence in Survey Research, NORC at the University of Chicago, as the Council of Chapters Representative to the ASA Board

Scott Evans, senior research scientist, Center for Biostatistics in AIDS Research, Department of Biostatistics, Harvard University, as the publications representative to the ASA Board

Natalie Rotelli, consultant computational statistician, Eli Lilly and Company, as chair-elect of the Council of Sections Governing Board

Isaac Nuamah, director, clinical biostatistics, Janssen R&D, as chair-elect of the Council of Chapters Governing Board

Following is a list of the entire slate of election results, including officers for each of the ASA's 27 sections:

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Section on Statistical Computing

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Program Chair-elect
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Chair-elect
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Program Chair-elect
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Adjusting the Odds

Mary Gray

This article originally appeared in CHANCE *magazine's special issue, The Rise of Women in Statistics & Data Science.*

Mary Gray, who writes the *CHANCE* column The Odds of Justice, is professor of mathematics and statistics at American University in Washington, DC. Her PhD is from the University of Kansas, and her JD is from the Washington College of Law at American University. A recipient of the Elizabeth Scott Award from the Committee of Presidents of Statistical Societies, she was chair of the American Statistical Association's Scientific and Public Affairs Advisory Committee.

Just as you may have used statistics to resolve issues for others, you too may benefit from their judicious use. There may be times when hiring, promotion, tenure, or other decisions don't go your way; you may feel the adverse result is not based on merit, but rather may be the result of discrimination. What recourse might you have?

There are laws that prohibit discrimination on the basis of race, gender, national origin, religion, age, and disability, but benefiting from legal protections can be difficult. Those of us who have been around awhile can remember when admission to graduate programs was specifically denied to women or jobs were listed in separate columns by gender, but overt gender discrimination is rare these days—and hard to prove even when it occurs. Lack of success is more likely to result from a series of microaggressions—sometimes characterized as "a thousand blows" or as implicit bias, although the bias is often not unconscious at all.

Statistics have proven useful in certain circumstances, but the task of proof is not an easy one. Showing that you are not the only victim may be fundamental; here, statistics may increase your chances of success.

Under various statutory provisions, there are two kinds of discrimination. Disparate treatment consists of treating someone differently on the basis of some protected characteristic. The "white only" signs that used to be affixed to restrooms, drinking fountains, housing, and elsewhere made this kind of discrimination pretty clear. "No Irish need apply" used to be endemic in certain cities; real estate covenants in the past prohibited Jews; and, as noted above, education and employment gender restrictions were common. In a more personal manifestation of discrimination, one might be denied a certain position because of a stereotypical view that it is "not a job for a woman" (maybe especially one with children).

More subtly, but just as harmful among the obstacles that can occur, are that the ideas expressed by a woman are ignored until promoted and claimed by a man; that "boy" is applied to an African-American man; that there is an outcry of "Islamic terrorists" should a tragedy occur; that preference is given to white male diners, airline passengers, or shoppers in electronics.

But in addition to these explicit discriminatory encounters, there is disparate impact discrimination; that is, although a practice or policy may be facially neutral and thus not overtly discriminatory, the result is.

For example, in a seminal case, the requirement of an electric company that line service workers be high-school graduates was found to

have a discriminatory racial impact because the percentage of African Americans in North Carolina with high-school degrees was considerably less than the percentage of whites, and it was also the case that many white linemen were completely effective without the benefit of such education; thus, it was not a legitimate job requirement, but rather illegal because of its discriminatory impact.

Similarly, height requirements that are not necessary for the performance of a job have been found to have a disparate gender and racial impact. Sherlock Holmes may have been the only resource in a case involving a preference for red-haired individuals, but today, this might be found to have an adverse national origin impact, and the scheme could not have been implemented legally even if robbery were not the goal.

Clearly, statistics play a big role in determining impact—we need to know that a requirement disproportionately disqualifies those in a protected category, and then we may need to know how crucial that requirement really is to performance of the task at hand.

Justification for a qualification that has a discriminatory impact in the employment context is generally characterized as "business necessity." Even in the case of disparate treatment, it may be useful to show that other women—here we cite gender discrimination, but the same is true in race or national origin cases—have suffered discrimination.

Litigation is expensive, so banding a group together in what is termed a "class action" case is a useful technique. Unfortunately, because of court decisions, this has become increasingly difficult in recent years. However, even in the case of a single complainant, statistical evidence of similar discriminatory conduct may be helpful; dozens, if not hundreds, of regression studies of salaries in higher education have shown that women, on the average, are paid less than men, even when measurable characteristics are the same.

Of course, the problem is that there are always other variables that might be included and that might explain the gender disparity, so the evidence shows discrimination is not always clear, either to employers themselves in internal studies or to the courts. Nonetheless, properly done, such investigations can be a powerful tool in remedying inequities or sometimes in showing that there are none.

Extensive challenges for the use of statistics to prove there is discrimination also can be seen—or more properly, to show that, absent discrimination, intentional or not, such results would not occur. Who is eligible for the job, for admission, to serve on a jury, and how do those numbers compare with those who have been successful?

While a finding of illegal disparate treatment requires showing intent to discriminate, no intent to discriminate must be shown when disparate impact discrimination is impermissible under statutory provisions. In general, whether disparate impact is illegal depends on statutory language or intent as interpreted by the courts. However, even when intent to discriminate must be shown, statistics can be helpful.

For example, beyond statutory protection, equal treatment is, in theory, promised by the 14th Amendment to the United States Constitution: "No state shall make or enforce any law which shall abridge the privilege or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

But it is important to remember that the Constitution protects one only against acts of the government in its various forms and not against private employers or other entities, whose acts may, however, be subject to specific legislation prohibitions.

In a recent case, North Carolina voting law restrictions were found to be unconstitutional because it was shown that the legislature made use of statistics to show, "with almost surgical precision" as the U.S. Supreme Court said, that changes in the law targeted procedures in a way that would disproportionately affect African-American voters. Provisions intended to prevent voter fraud might serve the "rational purpose" required by the least-strict form of constitutional review, but the numbers showed that the legislature's actual purpose was to suppress the votes of targeted portions of the electorate.

Certain forms of discrimination have withstood constitutional scrutiny—only in 1954 did the Supreme Court decide that the doctrine of "separate but equal" did not justify racially segregated public schools. That separate might be equal with respect to gender has been permitted under a less-stringent form of judicial review.

Race distinctions are subject to "strict" scrutiny. They must serve an important government purpose and there must be no less-discriminatory way to accomplish that purpose. Gender restrictions are examined at the less-restrictive "intermediate" level: They must further an important government

What the law says and what happens is, we know, not the same thing. Nevertheless, it is useful to know what legal recourse is available in cases of possible discrimination, particularly in education and employment.

interest by means that are substantially related to that interest. The Supreme Court upheld sex segregation in schools after *Brown v. Board of Education* outlawed racial segregation in 1954. Along the way, however, men gained entry to Mississippi University for Women, 18-year-old men were allowed to drink 3.2 beer, and the spouses of female military officers got the same benefits as spouses of male officers, until finally, in 1996, the court required the Virginia Military Institute to admit women.

Recently, the Supreme Court has found gender discrimination in marriage law unconstitutional; draft registration is still required only for males, but policy has mandated the opening of combat service to women. Remaining gender inequities would (in theory) be eliminated were the Equal Rights Amendment, passed by Congress in 1972 but not ratified by the states, to be adopted: Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex.

What the law says and what happens is, we know, not the same thing. Nevertheless, it is useful to know what legal recourse is available in cases of possible discrimination, particularly in education and employment. We begin by looking at international law and U.S. constitutional law.

The UN Convention to Eliminate Discrimination Against Women (CEDAW) provides for equality in a broad range of settings such as employment, education, and public services. The United States has not ratified this convention (the only other UN members who have not are Iran, Palau, Somalia, Sudan, South Sudan, and Tonga)—not that all countries that have ratified abide by the convention's provisions. In any case, U.S. courts are not generally disposed to be moved by international law.

The U.S. Constitution and the Bill of Rights (the first 10 amendments) provided a multitude of rights to men who were not slaves. Then, the post-Civil War 14th Amendment purported to give equal rights to everyone (as long as he was male). Subsequently, the 14th Amendment has been used to secure certain rights for women.

There are, of course, legal protections for women beyond employment and education, in particular (at least so far and in an attenuated manner) the right to choose how to control one's body (*Roe v. Wade,* 1973). Legislation guaranteeing nondiscrimination in housing, transportation, and public accommodation includes sex as a protected category, notwithstanding the current bathroom controversies.

There is also protective legislation that covers women and men, such as the Age Discrimination in Employment Act and the Americans with Disability Act (ADA). For example, the ADA requires accommodations be made for disabilities, while the Pregnancy Discrimination Act mandates the same for pregnancy. The Occupational Health and Safety Act (1970) requires a safe working environment for everyone (Where's the nearest restroom? How many hours do you have to work without a break?), and the Fair Labor Standards Act mandates a minimum wage of $7.25, but many cities and states have a much higher threshold that may be relevant for student employees, among others.

This brings to mind the abuse of the unpaid intern concept, although fortunately, that is less likely to be found when the work involves statistics or data science.

The Affordable Care Act eliminated most problematic health care issues, but it may not be around forever (or even next year), reintroducing access and cost issues, particularly for women—such as forbidding co-payments for contraception. Federal law requires only unpaid maternity and family care leave, but again, state or city regulations might be better. Moreover, many employers provide far more general benefits, but often subtly or otherwise discourage their use.

This is a difficult area; a few studies have shown that, in academe, using a benefit may have long-term adverse effects. For example, delaying a tenure decision may lead to a greater risk of denial.

State and city statutes sometimes provide more protection than is available at the federal level—for example, covering marital status, student status, a broader range of age discrimination, or stronger prohibition of sex discrimination. In the case of education, while the Supreme Court decision did not apply to sex, when the *Brown v. Board of Education* finding that separate cannot be equal was applied in a case involving Central High School in Philadelphia, the Pennsylvania state

constitution equal protection provision was found to guarantee equal access to women.

Although Title IX generally prohibits sex discrimination in education, its early successes were most notably in sports, with the past decades of victories by U.S. women in the Olympics attributed to the opportunities it made available. But the scope of Title IX is much broader. Now we hear not only of its prohibition against sexual harassment and assault, but also of how to deal fairly with everyone involved in reported cases. Although whether appropriate instruction in calculus was available was at issue in the Philadelphia schools case, there has been little litigation about adverse treatment of women (or of men) students in certain disciplines. It is important to note that prohibited discrimination includes not only disparate treatment, as discussed above, but also the creation of a "hostile environment."

What, then, is the underlying basis for the use of statistics in employment or education litigation? The proportion of beneficiaries who are women can be compared to the proportion of those eligible for the benefit and, finding a disparate impact, one can ask whether the discrepancy could have occurred by chance were selection free of discrimination.

Of course, there are limitations. One is guaranteed equal pay only for equal work, not for *comparable* work, and rejected applicants must have the same qualifications as those who succeed. But what qualifications are the same? Is a PhD in statistics the same as a PhD in biostatistics? How many years of experience do rivals have? Do we care about quality of publications, or only about quantity? Nearly every university, and many other employers, has struggled to answer these questions.

Many times, it is a question of who makes the decisions. For example, in *Wal-Mart Stores, Inc. v. Dukes* (2011), the Supreme Court held that decision-making was too distributed to allow comparison of employees nationwide in a wage suit. To put this in a context relevant to statisticians, can we compare across departments or across divisions or colleges? A rule of thumb might be that complainants seek a larger group for comparison purposes, while employers seek to shrink the comparison cadre, since we all know the influence of sample size. Courts have a regrettable tendency to follow much of the research community in placing an almost mystical importance on *p*-values, but that is a topic for another time and place.

Many have observed that the longer women are employed, the larger the salary discrepancies on average. A Supreme Court decision held that remedy must be sought at the time of the initial discrimination, even if it had gone on, and indeed worsened, over the years. The 2009 Lilly Ledbetter Act fixed that loophole in protection.

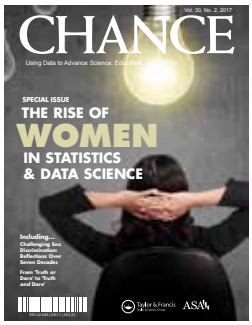
Title VII of the Civil Rights Act of 1964 forbids discrimination in employment on the basis of sex and other protected attributes. Of course, it is not simple. At one stage, the Supreme Court said pregnancy benefits could be excluded from health insurance coverage because pregnant men were also excluded. Congress passed the Pregnancy Act (1976) to remedy that problem.

It was claimed that men could receive more in periodic pension payments because that was discrimination on the basis of longevity, rather than on the basis of sex. Establishing the principle of equality in this case took more-complicated statistics than needed to establish the principle in the case of pregnancy benefits, and relief came in the form of a Supreme Court decision (*Arizona Governing Committee v. Norris,* 1983), rather than through Congress. Further pension equity came through the Retirement Equity Act of 1984, which assured protection of surviving spouses in plans of private employers.

One type of protection that many mistakenly believe they have is First Amendment freedom of speech. Private employers, including private colleges and universities, are not bound by constitutional provisions, although tradition or faculty handbooks may provide somewhat analogous academic freedom protection. Moreover, the First Amendment rights of government employees are severely restricted as far as job protection is concerned.

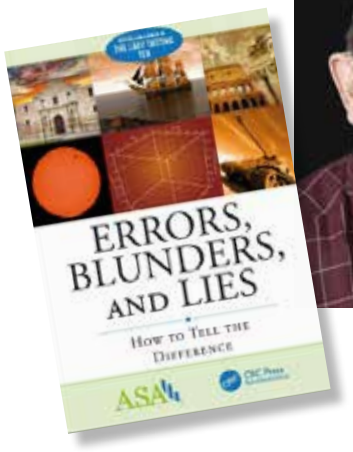
Let's be very clear—the purpose here is to make people aware of their rights. It is not to encourage rushing to the courthouse when you believe you have been treated unfairly. In many employment or education cases, there are internal mechanisms—although improving them is generally a good cause in which to enlist (Does the institution have an effective ombudsperson policy?). One may report employment, housing, public accommodation, etc., discrimination to state and federal agencies, admittedly with varying degrees of success. Litigation is expensive and difficult and can be traumatic even for victors. Moreover, the purpose of Title VII, for example, is to "make whole"; that is, you eventually get only what you were entitled to in the first place.

Good advice is to find out your conditions of employment or educational program earlier, rather than later. Solidarity is also useful in most situations, so think about helping your colleagues. ■



MORE ONLINE
View this and other articles in the latest issue of *CHANCE* magazine online at *http://chance.amstat.org.*

‘Lady Tasting Tea’ Author Publishes First Book in ASA/CRC Press Series



David Salsburg

MORE ONLINE
The second book in the ASA/CRC Press series is *Visualizing Baseball* by Jim Albert. Look for it in the fall at *www.crcpress.com.*

The editors of the series are seeking new books. Potential authors interested in submitting proposals should contact the editors at *asacrc@crcpress.com.*

Last year, the ASA and CRC Press combined forces to produce the Statistical Reasoning in Science and Society series. The idea was to produce short and inexpensive books about a range of topics aimed at professionals across many fields, the general public, and high school and college students that can be read in a reasonable amount of time. The first book in the series is *Errors, Blunders, and Lies: How to Tell the Difference* by David S. Salsburg, author of the bestselling *The Lady Tasting Tea: How Statistics Revolutionized Science in the Twentieth Century.*

In *Errors, Blunders, and Lies,* Salsburg opens a door to the widespread use of statistical methods by looking at historical examples of errors, blunders, and lies from areas as diverse as archeology, law, economics, medicine, psychology, sociology, biblical studies, history, and war-time espionage. In doing so, he shows how—upon closer statistical investigation—errors and blunders often lead to useful information. He also shows how statistical methods have been used to uncover falsified data.

Below, Salsburg answers a few questions about his new book and what inspired him to write it.

What do you want your audience to take away from the book?

As described in the preface, I wanted to show how exciting it is to delve into what John Tukey called “other people’s back yards.” I presented a collection of statistical regression models, avoiding any reference to hypothesis testing or *p*-values. This approach gets the reader right into the “mud” of someone’s back yard. I think that, by opening the book with the transit of Venus in the 18th century, I bring the reader immediately into a real scientific problem.

What inspired you to write this book?

I was invited to present to a high-school AP Statistics class while visiting family in Georgia, and I thought the transit of Venus would show them a well-defined real problem—a characteristic of statistics that is often missed in the standard presentation. The talk was never given, since a terrible ice storm closed the entire school system for three days; however, as I worked on the talk, I realized the transit of Venus was a perfect introduction to a three-fold approach to statistical problems.

What audience did you have in mind while writing your book?

The idea originated in a talk designed for high-school students, but I think the book should have wider appeal. It will provide a look at specific problems solved with statistical models, written so a nonmathematical reader can understand and enjoy the examples. It fits very well into the intent of the ASA/CRC editors to create a series of elementary books about the role of statistics in science and society.

What makes your book stand out from its competitors?

Although there are many popular science books explaining statistical models, I think this is the only one that looks at statistical models in terms of errors (the random element in all observations), blunders (data that come from a different distribution), and lies (faked data).

What did you enjoy about writing the book?

I needed examples that were striking enough in terms of subject matter, but with a statistical model simple enough to explain. This sent me to application articles in journals, advanced and elementary text books, and academic books aimed at a small subset of scholars with both subject-matter knowledge and mathematical sophistication. I had far too many “back yards” to fit into a book that had to be no more than 150 pages, but it has made me something like Mr. Dooley’s savant, who “could talk about any subject under the sun in front of them what knows nothing about it.”

Errors, Blunders, and Lies: How to Tell the Difference is available at *www.crcpress.com.* ■

Interview with *Significance* Editor Brian Tarran

Significance *magazine is written by statisticians for those with an interest in analysis and data. To find out how the magazine works and where story ideas originate, we asked the editor, Brian Tarran, the following questions.*

Tarran
Photo by Elyse Marks

What is the best part about being editor of *Significance* magazine?

The best part of any editor's job is when the publication goes to print. There's real satisfaction in putting together something for other people to read and enjoy. But as with any creative endeavor, that feeling only lasts about 24 hours. Then, you start to critique all the things you've done or wished you'd done differently, mulling them over and over until it suddenly dawns on you that you've got exactly eight weeks to get the next magazine together, so you'd better get a move on.

What's unique about *Significance*, though, is the opportunity to work with a diverse array of expert contributors—and I really do think I learn a lot from each of them. I'm not a statistician. I came to the magazine as a journalist, and my job is to work with statisticians to help them craft interesting and compelling stories. Working through that process—whether with our contributors or our editorial board—is never less than fascinating.

I like to think I've helped our writers to better communicate their ideas, but I can say without hesitation that working with statisticians has made me a better editor and writer—and a more critical thinker, particularly where numbers are concerned.

Where do story ideas originate?

Story ideas come from all manner of sources. Our editorial board is one key source. The members keep the magazine plugged in to what is happening in the statistical community and alert us to any interesting work that has been or is about to be published in journals or at conferences. We also keep an eye on what's happening in the wider world so we can offer a statistical take, or a statistician's perspective, on stories in the news. But many of the best ideas come directly from our contributors, and some of our most popular articles ever were submitted as part of our annual writing competition for early-career statisticians.

The digital version of the June 2017 issue of *Significance* is available. Read about how historians use a naval battle in World War I to explain how Bayesian thinking helps them reason with uncertainties of the past and how Lord Woolton, Britain's minister of food during World War II, used statistics (and more) to prevent the nation from starving. Additionally, access an exclusive excerpt from the new book *Errors, Blunders, and Lies: How to Tell the Difference* by David S. Salsburg, author of *The Lady Tasting Tea*.

Also in this issue:

- An economist argues Big Data may not be quite the game changer promised to those looking to predict stock market performance, especially with the ever-present danger of spurious correlations.
- We learn why the "most popular" baby names might not be the most popular—which is something to keep in mind the next time baby-name rankings are published.
- Data scientists apply machine learning to conference abstracts to speed up the event-planning process.
- A biostatistician tracks the ups and downs of her own pregnancy weight gain.

Access the digital version of *Significance* through Members Only or download and read the magazine on the go with our iOS and Android apps (see *https://tinyurl.com/ybkhsyzx*).

If you are a print subscriber, your June issue will be arriving soon.

Significance is online at *www.significancemagazine.com*.

Do you have any special issues or articles planned that readers can look forward to?
We've tended to avoid special issues in recent years in favor of a broad selection of topics in each magazine. We also try not to plan too far ahead so we can keep the content topical and relevant to the concerns of the day. That said, we are planning features on official statistics, Big Data, deep learning, pollution, data visualization, and the history of statistics.

What is your vision for *Significance,* and how do you see the magazine evolving?
My vision remains true to the founding remit of *Significance*—that is, to create a magazine that introduces and explains statistical ideas and concepts to readers and to publish accessible, entertaining, and informative articles that showcase the contribution statistics makes to all walks of life.

The challenge facing us now, though, is to think about how we continue to deliver on that remit. The print magazine remains popular—so we're not preparing for a digital-only future just yet—but we do need to take full advantage of digital media.

We relaunched our iOS and Android app last year and our website this year—both of which were redesigned to offer an improved mobile reading experience. But my long-term ambition is to start taking advantage of digital interactivity to bring our articles to life in a way that just isn't possible on the printed page. So, we're very much interested in working with statisticians who are excited about experimenting with different approaches to presenting content, both in print and online. As I said earlier, many of our best story ideas are to the credit of our contributors—and I expect that will be the case here, as well.

Do you have any tips you can offer someone interested in writing for *Significance?*
The starting point is always the synopsis. We're looking for a good, strong outline of the story you want to tell and some explanation of why it's important and why readers will want to read it. The story could be on any subject you like, provided you can make it accessible, relevant, and engaging to our audience.

When it comes to writing the article, contributors tend to have the most trouble with structure. People sometimes mistake *Significance* for a journal, and so submissions may be structured like a journal paper. But as a magazine, we're looking for a different style of presentation and story-telling. My job is to help with those aspects, but there's no real secret to writing in this way. If you enjoy reading magazines—including *Significance*—you'll know already what makes for a good article. ■

GIVEASA NEWS

Stats from the Road

Amanda Malloy, ASA Director of Development

"Before we go upstairs, would you like a vegan energy shot with cayenne pepper?" In more than 12 years of fundraising, being asked this question was a first. I declined the energy shot, but gratefully accepted the artistic cappuccino prepared by an expert barista. This particular visit was filled with firsts as we discussed possible ways the company I was visiting could support ASA programs.


Malloy

I was drawn to fundraising work because, like the visit I just described, it is filled with new experiences and incredible people. I started as the director of development in August of 2014, and in that time, I've met one on one with more than 50 ASA members and many more in groups at chapter meetings, luncheons, receptions, and other events. I've been invited into homes, places of work, and to favorite coffee shops and restaurants. I cherish each and every visit and truly love getting to know so many members. Through these relationships, I've learned so much more about the broad impact the statistics profession has on everyday life. It certainly validates for me why the ASA's work, focused on the following four key areas, is so important

EDUCATION

Opening Minds Through Statistics | Giving every student from kindergarten through graduate school the opportunity to learn and become excited about careers in statistics

PROFESSIONAL DEVELOPMENT AND MENTORING

Growing at Every Career Level | Helping statisticians at every career level continue to grow, learn, and be successful.

SCIENCE POLICY AND ADVOCACY

Raising the Profile of the Profession | Ensuring the proper use of statistics and that statisticians are involved in important policy decisions.

STATISTICAL LITERACY AND OUTREACH

Changing the Stereotype | Making access to good statistics more accessible to the public and raising awareness for the many careers in statistics and data science

It's been gratifying to not only see the impact of these contributions at work, but also to tell members about what the ASA does that they may not know about. It is a great time to be the ASA's director of development because of the hard work and volunteering of ASA members. Your willingness to help and contribute allows the association to do great things.

A big thank-you to all who have let me come visit and learn about what is important to you in your personal and professional lives. It has been a pleasure to get to know you!

If you are interested in chatting about giving opportunities, please reach out to me at *amanda@amstat.org.*

Career Satisfaction: A First Look

Committee on Career Development

The field of statistics is growing and changing. The workforce is demographically diversifying, and the kinds of local and global problems professionals are asked to solve using statistics are expanding exponentially. Given that professionals today have a high lifetime number of employers and are retiring at later ages, there is an interest in differentiating job satisfaction from career satisfaction, with the latter encompassing opportunities and professional contributions extending far beyond the aspects of any particular job.

Statisticians have one of the most satisfying careers, according to mainstream media and occupation experts. Despite this, the ASA has had no organizational record of a study of their members' career satisfaction in its 175-year history. Therefore, the ASA Committee on Career Development (CCD) submitted a proposal to the ASA to do a career satisfaction survey. In March of 2015, a group consisting of CCD members and representatives of other ASA committees formed to design and implement a career satisfaction study of the ASA members.

An extensive literature search was performed and a validated metric for career satisfaction was identified and used as the study outcome. The study outcome, the career satisfaction score (CSS), was based on five questions, each scored on a five-point Likert Scale from 0 to 4. Thus, the range for CSS was 0 to 20. The career satisfaction survey included CSS questions, demographics, career-related items, and job-related items.

A random sample of 2,002 members was taken and 447 responses were obtained through an online survey service in the last quarter of 2015. A CSS was calculated for every respondent, and the distribution of CSS is in Figure 1.

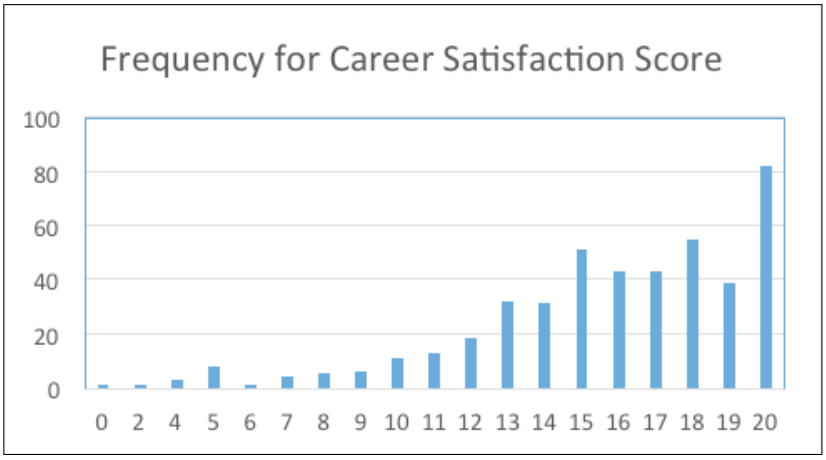


Figure 1: Of the 447 responses, 70% of surveyed members had career satisfaction scores greater than or equal to 15. Nearly 20% of those interviewed had a CSS equal to 20.

Given that data were skewed, quartiles of CSS were analyzed (Table 1).

Table 1—Quartiles of CSS, Analyzed

CSS Quartile	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Q1: 0–14	134	29.98	134	29.98
Q2: 15–16	94	21.03	228	51.01
Q3: 17–19	137	30.65	365	81.66
Q4: 20	82	18.34	447	100.00

A logistic model predicting for the highest CSS score (i.e., CSS=20) was run. The results emphasized the importance of the ASA membership on high career satisfaction. High career satisfaction was positively associated with membership in only one professional association (i.e., the ASA), membership in the ASA for 10 or more years, and being satisfied with the career development support the ASA offers; high career satisfaction was negatively associated with looking for work in the last three months.

An analysis of career development support showed almost half of ASA members who were surveyed reported not knowing the ASA offers career development support. This finding, along with results of the modeling, suggests a deeper look at career development support—ways members define it, types of support members prefer, types of support the ASA offers, and ways the ASA promotes availability of support—is needed.

Additionally, more effort to engage members in the first 10 years of their ASA membership and to aid those looking for work is warranted. Such efforts may increase career satisfaction for ASA members, especially younger members, and may have implications for member retention.

If you have questions about this article, please contact Monica Johnston through the ASA Community at *http://community.amstat.org/home.* ■

Statisticians Highlight Scientific Research on Capitol Hill

Amy Nussbaum, ASA Science Policy Fellow

Mark and Stacey Culp on Capitol Hill

On May 16, the ASA sponsored two exhibitors as part of the 23rd annual Coalition for National Science Funding (CNSF) Congressional Exhibition, intended to celebrate National Science Foundation grant recipients and their most recent research.

Mark and Stacey Culp, professors in the statistics department at West Virginia University, traveled to Washington, DC, to present work from Mark's NSF CAREER Grant on Machine Learning Solutions to Big Data Problems in Biometrics and Drug Discovery. Likening Big Data problems to "searching for a needle in a haystack while someone's dumping more hay on top of you," Mark explained his research to congressional staff, NSF personnel, and members of other scientific organizations during the official reception in the Rayburn House Office Building and described how the methodologies can be applied in multiple arenas.

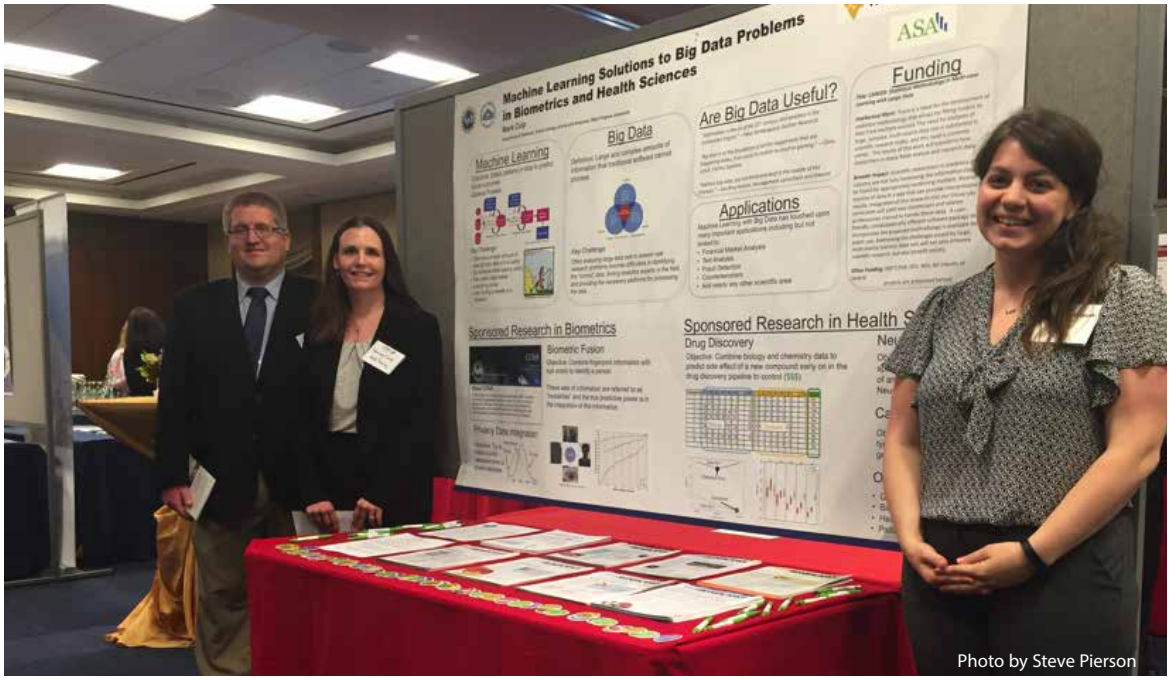
Earlier in the day, the Culps met with staff in the offices of Senators Joe Manchin and Shelley Moore Capito—as well as representatives David McKinley, Alex Mooney, and Evan Jenkins—to urge robust NSF funding for FY18 and discuss support for science in West Virginia. The West Virginia delegation to Washington is especially influential on NSF funding, with both senators and Rep. Jenkins serving on the appropriations subcommittee that determines the NSF's budget.

"We're really grateful to Mark and Stacey for spending the day in Washington," said Steve Pierson, ASA director of science policy. "Members of Congress and their staff continually hear from their constituents on a variety of issues and it's imperative to the health of agencies like NSF and NIH that such constituents include supporters of federal research funding."

CAREER grants also require teaching commitments, so Mark was able to discuss both his research and equipping students with the latest tools of the trade so they can find jobs upon graduating and connect with industry. Many staffers were delighted to see such a return on investment coming from the NSF research dollars.

Mark Culp discusses his research with NSF Director France Córdova.

Mark Culp discusses his research with Rep. Jerry McNerney (D-CA), a PhD mathematician.



Mark and Stacey Culp with ASA Science Policy Fellow Amy Nussbaum

Stacey also discussed her research with statistics and health care applications and how such work can improve the quality of life for West Virginians—another top priority for their legislators.

Mark stated, "It was an honor to represent the ASA at the CNSF exhibition and to share some Big Data applications of my NSF-funded research on Capitol Hill. I was able to discuss my research with a steady stream of engaged attendees and other presenters." Stacey added, "I appreciated the warm reception by the staffers and was impressed by their understanding of the significance of the NSF and the need to continue to support it."

The Coalition for National Science Funding is an alliance of more than 100 organizations "united by a concern for the future vitality of the national science, mathematics, and engineering enterprise." In addition to the annual exhibition, CNSF also organizes sign-on letters, hosts monthly stakeholder meetings, and targets key congressional appropriators in support of increasing national investment in the National Science Foundation's research and educational programs. Other member organizations include both scientific associations and universities.

This is the seventh time the ASA has participated in the event. Previous representatives include Richard Smith of the Statistical and Applied Mathematical Sciences Institute, Genevera Allen of Rice University and the Neurological Research Institute at the Baylor College of Medicine, and Peter Craigmile of The Ohio State University. ■

STAT*tr@k*

Five CS Skills I Wish I Learned in College

Lindsay Hall, Google NYC

Lindsay Hall is a software engineer at Google. She joined Google full time in 2012, when she started working on the Google Docs web team. Since then, she has worked on Google Slides, the Docs performance team, and the Google Sites front-end web team.

Editor's Note
This is reprinted with permission from the Big Math Network.

I started working full-time as a software engineer (SWE) at Google NYC in 2012, after graduating from Harvey Mudd College with a degree in math and computer science. Prior to joining full time, I did three SWE internships with Google, working at YouTube in the San Bruno office and with the Google Docs team in NYC.

By the time I did my first technical interview with Google, I was fortunate enough to have learned the skills and topics usually covered in these interviews, which tend to focus on coding, algorithms, and data structures. In general, if you can pass a Google technical interview, you can learn the rest of the skills on the job, but there are some key areas where I wish I'd been better prepared in college.

A college degree is generally supposed to prepare you for a job in that field (hopefully we can all agree on that). Obviously, software engineering isn't the only field you can enter with a degree in computer science, but there are more than 1 million software engineers in the United States, and the field is expected to grow by almost 20% by 2024. Are college-level CS programs really teaching the skills required for students to become professional software developers? Well, yes and no. Here are some of the topics I think were covered well in my program, as well as some of the areas I think were lacking.

Things My College Program Did Well

Many of the skills I learned during my time at Harvey Mudd College continue to be invaluable to my job. These include the following:

- A rigorous background in algorithms and data structures
- Coding knowledge, including experience coding in multiple languages (Python, Java, C++, and others) and an understanding of the differences between various types of programming languages
- Experience working closely with other engineers to solve problems together
- Practice explaining technical concepts to an audience, either in written or presentation form
- An understanding of how computer science can be used to solve problems outside of purely technical fields

Things I Wish My College Program Had Done Well

Despite all the amazing, important things I learned in college, I spend most of my day doing things I never learned how to do before joining Google. Here are five topics that are critical to my day-to-day job at Google that I think should be required learning for all college CS students:

Working in an Existing Codebase

Unless you're founding your own start-up, it's highly unlikely you're going to be writing any significant code from scratch as an SWE. The very first skill I had to learn at Google was how to read and understand the existing code for my project, and how to integrate my changes into that codebase while adhering to the design patterns already in place.

College CS courses tend to focus on writing code from scratch, or implementing methods in an existing class. I've never heard of a class that required students to understand and make changes to a large, pre-existing codebase (although such a class might exist). This is a crucial skill for future software developers and one that should be stressed in college curriculums.

Testing Code

Writing automated tests for your code is a huge part of working in a large codebase. Tests help ensure the correctness of your code, provide information about the expected behavior of methods/classes, and protect your codebase against future regressions. Test-driven development is also a popular strategy for software development at many companies.

A few of my college courses required students to write unit tests for their code, although there was never any emphasis on testing strategies or best practices for writing unit tests. While unit testing is a big part of the test suite at many companies, other types of testing are

critical as well, including integration testing, screenshot testing, and automated testing of production code using a prober or a bot. Understanding testing practices and the importance of different testing approaches is critical to working as an SWE, especially at a large company.

Writing Design Documents

As I mentioned earlier, I was fortunate to attend a college that placed a strong emphasis on technical communication, both written and verbal. I would say the single most important thing I do in my day is communicate with my coworkers, whether it be about code I'm writing, code they're writing, or a design we're working on together.

A design doc is a key component to working on a project at Google. Before you start writing code, you need to outline your proposed changes in a format that can be easily shared with your team members and reviewed by at least one coworker. Doing these reviews before you start coding saves a lot of time and energy, since you can iterate quickly on various design ideas without having to update your code each time. Learning how/when/why to write a design doc or proposal is a skill I wish I had learned before starting at Google.

Conducting Code Reviews

Many companies adhere to a code-review process in which every line of code submitted is reviewed by at least one other engineer. This allows for a second pair of eyes to catch bugs and suggest improvements. It also helps spread knowledge among the team (so at least two people know how all the recently submitted code works).

Learning to review someone else's code for correctness, style, and good design is an important skill. Also, it's important to learn how to have your code reviewed and how to take feedback and suggestions (and when to push back on those suggestions).

Working on Large-Group Projects

At Google, there are often many working on a single project at any given time. In those situations, it is critical to break up the work in such a way that peoples' changes don't conflict and everyone can be productive without being blocked on someone else's changes. Learning how to parallelize the tasks in a project and coordinate across a large number of engineers is a critical skill. While some college courses encourage or require group work, most don't require students to work in groups larger than 3–4. Learning how to manage a long-term, multi-person project as part of a CS class would be a large benefit. ■

MORE ONLINE
In her free time, Hall enjoys taking aerial silks classes. See a photo of her during a silk class at the Big Math Network website: *http://bit.ly/2spIV8o.*

SCIENCE POLICY

FY17 Federal Budget Resolved; Trump's FY18 Budget Request Released

Steve Pierson, ASA Director of Science Policy

With only five months remaining in fiscal year 2017 (FY17), Congress and the administration agreed in early May to a final budget for the federal government. Save for the U.S. Census Bureau and Agency for Healthcare Research and Quality (AHRQ), the final FY17 levels are generally good for the National Institutes for Health (NIH), National Science Foundation (NSF), U.S. Food and Drug Administration (FDA), and federal statistical agencies. The FY18 budget requested by President Trump, on the other hand, contains sharp cuts for the research funding agencies and cuts or underfunds the federal statistical agencies.

FY17 Final Budget

NIH did extremely well in FY17 with its second consecutive annual increase of $2 billion, having once again achieved strong bipartisan support after more than a decade of declining purchasing power as a result of inflation and budget cuts. The increase includes an additional $400 million for research on Alzheimer's disease, $120 million for the Precision Medicine Initiative, $110 million for the Brain Research Through Advancing Innovative Neurotechnologies (BRAIN) Initiative, $50 million for antibiotic resistance research, $300 million for cancer research, $152 million for research on the Zika virus infection and countermeasures, and $352 million to implement the 21st-Century Cures Act.

The FY16 increase of $2 billion allowed NIH to fund its research-related (i.e., R01) grants at a proposal success rate of 20%—its highest since FY10, but still far below the FY03 rate of 30%.

The NSF is held to essentially the same level as FY16. The Agency for Healthcare Research and Quality (AHRQ) was cut by $10 million, but this is the third consecutive budget cut and its budget is down substantially from its FY12 level of $381 million. If there is a silver lining for AHRQ, it is that the House had approved a budget of a steeper cut to $280 million in FY17.

The FY17 budget for the U.S. Census Bureau was increased 7% over FY16, but this is only one-third the increase requested in the

Table 1—FY15–FY17 Budgets and FY18 Requests for NIH, NSF, AHRQ, FDA, and Primary Federal Statistical Agencies

			FY17		FY18	
	FY15	FY16	Final	change from FY16	Request	change from FY17
Research Agency (amounts in millions of dollars)						
NIH	30311	32311	34084	5.5%	25870	-24.1%
NSF	7344	7463	7472	0.1%	6653	-11.0%
AHRQ	364	334	324	-3.0%	272	-16.0%
FDA	2597	2730	2759	1.1%	1885	-31.7%
Statistical Agency (amounts in millions of dollars)						
BEA	96.3	105.1	103.3	-1.7%	97.0	-6.1%
BJS	41.0	41.0	45.5	11.0%	41.0	-9.9%
BLS	592.2	609.0	609.0	0.0%	607.8	-0.2%
BTS	26.0	26.0	26.0	0.0%	26.0	0.0%
Census	1088.0	1370.0	1470.0	7.3%	1494.0	1.6%
EIA	117.0	122.0	122.0	0.0%	118.0	-3.3%
ERS	85.4	85.4	86.8	1.6%	76.7	-11.6%
NASS	172.4	168.4	171.2	1.7%	185.7	8.5%
NCES	232.1	274.0	272.5	-0.5%	271.0	-0.6%
NCHS	155.4	160.4	160.4	0.0%	155.0	-3.4%
NCSES	58.3	58.3	60.0	2.9%	56.9	-5.3%
ORES	29.0	25.9	25	-3.5%	31.0	24%
SOI	36.8	37.8	34.3	-9.3%	33.6	-2.0

*The FY15 and FY16 levels for NIH are program levels.

ramp-up to the decennial census, greatly raising concerns about the preparedness for the decennial with three years to go. Also complicating preparations is that the Census Bureau was essentially held at its FY16 spending levels for the first seven months of the fiscal year, causing it to forestall or cancel many plans. Because the 2018 fiscal year will also begin under a continuing resolution—holding agencies to their FY17 funding levels unless anomalies are granted—decennial census preparation will be further complicated.

Among the immediate consequences of the weak budgets are conducting only one of the three planned end-to-end readiness tests, a delay in the start of the advertising for the decennial budget, and a delay in the opening of decennial census field offices. Elsewhere in the bureau, for example, publications from the quinquennial economic census will be delayed.

The National Agricultural Statistics Service (NASS) and Economic Research Service (ERS) each received modest increases of 1.6–1.7%, welcome news considering they are each at or below their FY10 funding levels. The increase for NASS included $1.6 million to expand its current feed cost component surveys nationally and recognized the importance of the pecan survey. The increase for ERS specified "increases for cooperative agreements on groundwater modeling, drought resilience, and pay costs as requested in the budget." ERS and NASS are still until intense budget pressure because the 14% reduction in purchasing power due to inflation (as reflected in figures 1 and 2), putting many of their programs at risk.

The Bureau of Justice Statistics (BJS) received an increase of $4.5 million, with $5 million of its overall budget directed to the National Crime Statistics Exchange (NCS-X) "to improve the collection and reporting into the National Incident-Based Reporting System."

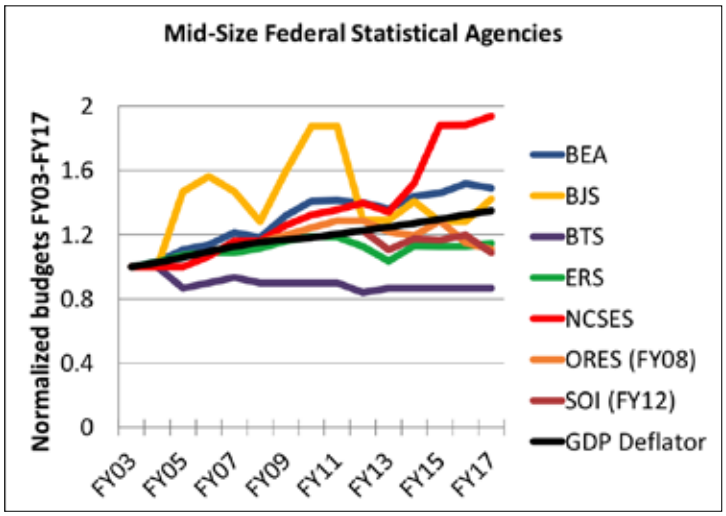


Figure 1: The budgets of the seven mid-sized statistical agencies normalized to their FY03 levels, along with the GDP deflator to account for inflation. The Social Security Administration Office of Research, Evaluation, and Statistics' budget is normalized (and adjusted for inflation) to its FY08 level, when the current accounting scheme was implemented. Similarly, the Statistics of Income budget is normalized to its FY12 level.

The budget for the Bureau of Economic Analysis (BEA) was cut 1.7% to $103.3 million, forcing it to delay two popular programs—county-level GDP estimates and a regional economic dashboard.

The final FY17 Internal Revenue Service Statistics of Income Division (SOI) budget represents a 10 percent cut relative to FY16 and reflects ongoing hiring restrictions related to more than 5 years of overall IRS budget reductions. Indeed, as seen in Figure 1, the current SOI budget is off more 20% in purchasing power since FY12, resulting in delayed release of some products, reductions the content of other products, and hampered efforts to modernize data dissemination practices.

The budgets for the remaining agencies—National Center for Health Statistics (NCHS), Energy Information Administration (EIA), Bureau of Labor Statistics (BLS), National Center for Education Statistics (NCES)—either held flat or are within a percent of their FY16 funding level.

Details are not yet available for the FY17 budgets of the National Center for Science and Engineering Statistics (NCSES) and Social Security Administration Office of Research, Evaluation, and Statistics (ORES).

Figures 1 and 2 show the normalized budget of the 13 agencies to their FY03 levels, where one can see many agencies lagging inflation and thereby resulting in cuts in purchasing power. At the June 2 meeting of the Council of Professional Associations on Federal Statistics (COPAFS), many agency heads described the effects of flat or declining budgets, including hiring freezes, cutbacks in periodicity or geographical scale of data, travel cuts, and delays to program improvements. NCHS, for example, is down nearly 50 positions from roughly 450. Besides lacking a deputy director, the cuts strain important functions like the catalogging of deaths from opioid death or suicides. Several other agencies also reported such personnel gaps. Another agency described finally being approved for three hires after a conservative 2015 request for six hires.

The Bureau of Transportation Statistics (BTS) is not funded through the normal appropriations process—but by the Highway Trust Fund—and so is not influenced by either the FY17 budget deal or the FY18 request.

President's FY18 Requested Budget

The president's FY18 full budget request was released May 23 and provides details of the cuts to non-

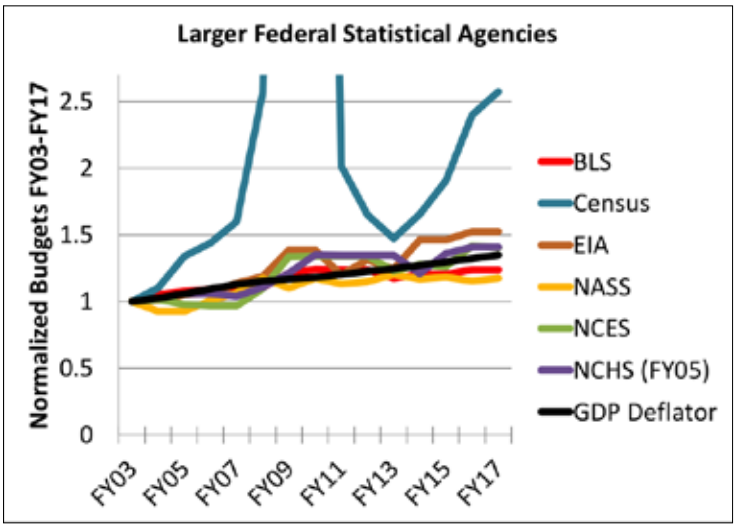


Figure 2: The budgets of the six larger statistical agencies normalized to their FY03 level, along with the GDP deflator to account for inflation. The NCHS annual budgets are normalized (and adjusted for inflation) to the FY05 level, when the current accounting scheme was implemented. The U.S. Census Bureau line peaks at 12.65 in FY10.

defense discretionary budgets outlined in their March document. We already knew of a 24% cut requested for NIH, a grossly insufficient increase for the U.S. Census Bureau, and likely cuts for the ERS and NASS. With the full budget now out, we learned of requested cuts of 11% for NSF, 16% for AHRQ, 32% for FDA, and more modest cuts or insufficient funding for the federal statistical agencies. One could say the smaller requested cuts for the federal statistical agencies are good news, but any cuts are concerning because of the years of generally flat funding discussed above.

The mantra from Capitol Hill around the president's request, which is continued from previous administrations, is that Congress takes the request as a suggestion and is responsible for the final appropriated level. The current reiteration of Congress's authority around the budget means they are unlikely to accept the sharp cuts in nondefense discretionary accounts. However, flat-funding or more modest cuts remain a distinct likelihood, partly because of the overall decrease in federal discretionary funding of 0.5% from FY17 to FY18. As a result, it remains critical for the statistical and broader community to communicate to their members of congress the importance of robust budgets for the agencies discussed here.

MORE ONLINE
To see how statistical agencies would cut their programs to realize their proposed budget cuts, visit *http://bit.ly/2s2WMBQ* and follow the links therein.

The NIH FY18 request, according to its overview document, consolidates the AHRQ within NIH as the National Institute for Research on Safety and Quality, funding it at $272 million. Further, in keeping with the recent passage of the 21st Century Cures Act, the request includes $496 million for the Precision Medicine Initiative, All of Us, Beau Biden Cancer Moonshot, BRAIN Initiative, and a new regenerative medicine project ($30 million) to support clinical research using adult stem cells in coordination with the FDA. To maintain its level of support research, or at least minimize a reduced level of research support due to the proposed cut, NIH will cap the indirect cost rate at 10%.

The cut for NSF is generally spread evenly across its research, facilities, and education budgets and, if enacted, would mean a 10% cut for the Division of Mathematical Sciences. The budget requests documents maintain an emphasis on the 10 big ideas they highlighted in 2016, and that includes harnessing Big Data. The FY18 request also proposes to continue a number of initiatives established under the Obama administration, albeit at a reduced level.

For the FDA, the Alliance for a Stronger FDA points out some confusion around the FY18 request, namely that the president proposed a 9% ($452 million) increase in aggregate funding for the agency while it would also cut $871 million from the agency's budget authority (BA) appropriations, which is a 31% decrease.

The Census Bureau budget proposal is an increase of 1.6% over FY17, which would further hamper planning efforts for the decennial census after the small increase for FY17. Besides the reduced testing mentioned above, delayed and insufficient funding in FY18 could imperil the critical work to build community partnerships, begin advertising, and perform address canvassing.

For NASS, the quinquennial Census of Agriculture is fully funded, with an increase of $22 million, signaling strong support for this program. However, the NASS agricultural estimates programs are proposed to be cut $7.5 million.

The FY18 SOI budget reflects further staff reductions, through attrition, and may necessitate the elimination of a core data series. The rest of the federal statistical agencies generally do much better than other nondefense discretionary programs. For example, the ERS budget is proposed to be cut 12%, while the overall U.S. Department of Agriculture budget is proposed for a 22% cut. Similarly for NCHS, which is slated for a 3% cut, its parent agency, the U.S. Centers for Disease Control and Prevention, has a proposed cut of 17%. Indeed, looking at Table 1, the cuts are otherwise more modest than that of ERS. This is not to minimize the effects such cuts would have for the federal statistical agencies if enacted. As discussed in the final FY17 section above, nearly all the federal statistical agencies are facing critical staffing, program, and other budget challenges, so I again urge readers to ask their members of Congress to adequately fund these programs, the cornerstones of evidence-based policymaking. ■

CONSULTANT'S CORNER

Papers, Posters, Roundtables, Oh My!

Mary Kwasny, ASA's Section on Statistical Consulting Publication Officer

JSM is just around the [consultant's] corner. The officers and volunteers of the Section on Statistical Consulting have worked hard to plan a diverse and provocative menu for those at all levels of career and interest. If you have not been to JSM or have not been there in a while, let me tell you it has become a great place to network, learn a few new tricks of the trade, meet people with similar interests, and—this year—see a bit of Baltimore.

If you have been to JSM recently, I must ask, "What is one of the qualities that all great consultants share?" If you thought to yourself, "The communication skills to explain to others the meaning and message that exists inside what seems like chaos," then consider the opportunity to use your consulting skills as a JSM docent. Since JSM 2014, docents have assisted first-timers through the seeming chaos that is JSM. Sign up at *ww2.amstat.org/meetings/jsm/2017/moretodo.cfm* if you are interested.

The First-Time Attendee Orientation and Reception is Sunday at 12:30 p.m. Also, consider getting involved in any of the many mentoring programs (also *ww2.amstat.org/meetings/jsm/2017/moretodo.cfm*). Sharing both successes and failures is one way to ensure this field continues to grow and move forward.

From a bird's eye view, here's where many of us will be:

Sessions

- Statistical Consulting Applications (Sunday)
- A Consulting Dish Cooked Three Ways: Contrasting Approaches for Dealing with Internal, External, and Academic Consulting Clients (Monday)
- What Should an Academic Consulting Statistician Do? (Monday)
- Consulting, Collaboration, Communication, and Impact (Tuesday)
- Collaborative Research on Measures of Health Disparities (Wednesday)
- Challenges and Rewards of Major Career Changes for Collaborative Statisticians (Wednesday)
- Bridging the Gap Between Statistics and Other Data Sciences: Where's the Bridge? Where's the Gap? (Thursday)
- The Leadership Journey for Statisticians (Thursday)

Roundtables

- How to Grow a Successful Statistical Consulting Enterprise (Monday)
- Structures of Successful Stat Labs (Monday)
- Consulting, Collaboration, or Something Else? Perspectives (Tuesday)
- Meetings: Turning Stumbling Blocks into Stepping Stones (Tuesday)
- A Statistician's Guide to Data Storytelling in Business (Wednesday)
- Impact of Successful Stats Consulting in a Fast-Changing Environment: A Pharmaceutical Industry Perspective (Wednesday)

Posters

- Teaching a Large, Project-Based Statistical Consulting Class (Sunday)
- Meta-Analysis of Conflicting Outcome Measures (Tuesday)

Speed Session

- Where Does All the Time Go? Measuring Clients' Service Utilization via Time-Tracking Software (Tuesday)

Professional Development Course

- Research and Analysis Workflows: Low-Cost, Every-Day Project Management Techniques, Tools, and Tips That Produce High-Quality, Streamlined, Stress-Free Research and Data Science (Tuesday)

If you are new to the consulting section, or just want to learn more about who we are and what we do, be sure to attend our business meeting and mixer Tuesday evening at 5:30 and 6:30, respectively. Note that all business meetings for all sections are open to everyone (unless they are specifically marked "closed" in the program book), and the business meetings are a great way to meet the members of and get a feel for a section.

This year, several sections with similar member bases have suggested a super mixer. This is somewhat breaking news, so be sure to check the final JSM program to see which sections are included. I believe the Statistical Consulting, Physical and Engineering Sciences, and Quality and Productivity sections will be co-hosting a single mixer after their respective business meetings. While it may have a detrimental effect on your step count for the day, it will be nice to not have to cut conversations short so you can make appearances at three places within one hour. Then again, after not running around, you may have enough energy to make it to the Tuesday night dance party!

Hope to see you at JSM! ■

Mary Kwasny is an associate professor in the department of preventive medicine and an active member of the Biostatistics Collaboration Center at Northwestern University, Feinberg School of Medicine. She has been enjoying the art of statistical consulting and collaboration for more than 20 years in academic medical centers and external nonprofits.

MASTER'S NOTEBOOK

Opportunities Await Applied Statisticians at JSM

Sameera R. Wijayawardana, Committee on Applied Statisticians

Wijayawardana holds a PhD in biostatistics from Emory University. For six years, he has worked as a statistician at Eli Lilly and Company, supporting the development of targeted cancer therapeutics and companion diagnostics. He has also been active with the ASA and other international statistical professional associations.

As a recently appointed member of the ASA Committee on Applied Statisticians (CAS), I'm delighted to have this opportunity to talk to you about this year's Joint Statistical Meetings. JSM, *as* the largest gathering of statisticians held in North America, offers a unique opportunity for statisticians in academia, industry, and government to exchange ideas and explore opportunities for collaboration. This year, JSM will take place in Baltimore, Maryland, from July 29 to August 3. The theme is "Statistics: It's Essential," meant to emphasize the fundamental importance of statistics to all aspects of scientific and societal endeavors, and even to seemingly mundane daily life. It is certainly a timely theme when we consider how much the 'news' we are exposed to seems to rely on misrepresentations of quantitative evidence that would not stand up to even a rudimentary application of statistical reasoning.

This year's JSM program, as is normally the case, consists of many technical sessions on a variety of topics. When you add in all the roundtable discussions, business meetings, professional development courses and workshops, award ceremonies, and other social events on the program, sifting through it all can seem daunting. The best place to start this process is with the JSM online program, where you can use the Advanced Search option to search by day, event type, and event sponsor.

For example, being a member of the biopharmaceutical section and of CAS, I tend to look for sessions sponsored by those two groups first. In my experience, a good way to whittle the program to a manageable size is to figure out the top three events you want to attend each day. Once you have budgeted time for these top events, you can start filling in the gaps in your schedule with a mix of technical sessions and other meetings and activities. I also use the My Program option to add events I want to attend to a customized list that I can download as a .csv file.

When you're searching through the program, note that a '*' preceding a session name means the session is designated as an "applied" session. A '!' preceding a session name means the session reflects this year's meeting theme.

In addition to technical sessions, there are a number of professional development offerings worth considering. These are additional-fee events, but they offer tremendous value if you are interested in staying up to date in a technical area or want to learn something new to add to your repertoire.

The introductory overview lectures are good to catch if you want to learn about a new area, albeit at a basic level. I am particularly interested in going to the "*Computer Age Statistical Inference" lecture that will be given by professors Brad Efron and Trevor* Hastie on Monday.

The various awards and recognition ceremonies sprinkled throughout the meeting offer an excellent opportunity to mingle with distinguished members of our profession and to hear their thoughts about current opportunities and challenges. Of note is ASA President Barry Nussbaum's talk, "*Statistics: Essential Now More Than Ever (Or, Why Uber Should Be in the Driver's Seat for Cars, Not for Data Analysis)*" during the ASA President's Address and Founders & Fellows Recognition Tuesday night.

The A.M. and P.M. roundtables are a great way to share ideas with people working on similar areas or issues of interest. And the JSM Opening Mixer on Sunday night and Dance Party (a fun highlight of JSM) on Tuesday night are excellent venues for unwinding and mingling with fellow attendees.

JSM also provides numerous ways to contribute to our profession by volunteering for sections, chapters, and ASA initiatives. You can learn more about these by attending the relevant section/chapter meetings in the evenings. For example, if you want to learn more about CAS, you are welcome to come to the friends of CAS social mixer Tuesday from 3–4 p.m. in the Hilton - Poe B.

With the wealth of technical sessions, networking opportunities, and social events offered this year, I think we are going to have a great JSM in Baltimore. I'm eager to get there in July, and I look forward to seeing all of you there as well! ■

Opportunities for Applied Statisticians at JSM

Date	Location	Day	Time	Topic
SHORT COURSES (Added Fee)				
07/29	H-Holiday Ballroom 3	Saturday	1:00 p.m. – 6:30 p.m.	Preparing Statisticians for Leadership: How to See the Big Picture and Have More Influence, Part 1
07/30	H-Holiday Ballroom 3	Sunday	8:00 a.m. – 12:00 p.m.	Preparing Statisticians for Leadership: How to See the Big Picture and Have More Influence, Part 2
07/30	H-Holiday Ballroom 4	Sunday	8:30 a.m. – 5:00 p.m.	Bayesian and Frequentist Adaptive Methods for Clinical Trials
APPLIED SESSIONS				
07/30	CC-350	Sunday	2:00 p.m. – 3:50 p.m.	Communication and Collaboration: Greatest Hits from CSP!
07/30	CC-316	Sunday	4:00 p.m. – 5:50 p.m.	Adaptive Design and Statistical Consideration in Clinical Trials
07/31	CC-317	Monday	10:30 a.m. – 12:20 p.m.	Enrichment Clinical Trials: Novel Designs, Statistical Inferences, and Case Studies
07/31	CC-326	Monday	2:00 p.m. – 3:50 p.m.	A Consulting Dish Cooked Three Ways: Contrasting Approaches for Dealing with Internal, External, and Academic Consulting Clients
08/01	CC-349	Tuesday	2:00 p.m. – 3:50 p.m.	Negative Results: They're Essential!
08/01	CC-341	Tuesday	2:00 p.m. – 3:50 p.m.	Estimands: What Is Essential Is Invisible to the Eye
08/02	CC-318	Wednesday	10:30 a.m. – 12:20 p.m.	Essential Skills for Communicating Statistics
08/02	CC-336		2:00 p.m. – 3:50 p.m.	Statistics for Computer Experiments: Collaboration Between Industry and Academia
08/03	CC-321	Thursday	8:30 a.m. – 10:20 a.m.	Bridging the Gap Between Statistics and Other Data Sciences: Where's the Bridge? Where's the Gap?
08/03	CC-321		10:30 a.m. – 12:20 p.m.	The Leadership Journey for Statisticians
COMMITTEE ON APPLIED STATISTICIANS (CAS) - SPECIAL EVENTS				
07/31	H-Key Ballroom 3	Monday	3.00 p.m. – 4.00 p.m.	Chair/Chair-elect Collaboration Workshop
08/01	H-Poe B	Tuesday	3.00 p.m. – 4.00 p.m.	Friends of CAS - Social Mixer

CC=Baltimore Convention Center

H=Hilton Baltimore Hotel (401 West Pratt Street)

Note: View the online program for up-to-date times and locations. *ww2.amstat.org/meetings/jsm/2017/onlineprogram.*

PASTIMES OF STATISTICIANS

What Does Larry Moulton Like to Do When He Is Not Being a Statistician?

Photo by C. Laszio

Moulton after jumping from an airplane in Dubai in October of 2015

Moulton

Who are you, and what is your statistics position?

My name is Larry Moulton. I am a professor in the department of international health (jointly appointed in the department of biostatistics) in the Johns Hopkins Bloomberg School of Public Health. I mainly design and analyze large, usually randomized, field trials around the world.

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

I have been a skydiver since I was 19, although there was a near-25-year break in jumping due to the demands of family and career. This is the kind of activity that requires a minimum amount of participation to remain 'current.' Currency will keep you from being an undue hazard to yourself or others, as well as help maintain your flying skills so you can frolic with your buddies in freefall.

My typical skydiving day is comprised of 3–5 jumps from 13,500 feet. Each jump starts by choreographing and practicing our planned aerial maneuvers on the ground—it looks a bit like synchronized swimming, as we join in one pattern, let go, and rejoin in another. Then, there is a 15-minute plane ride to the exit altitude, about a minute of freefall, a few minutes gliding about under canopy, and (usually) a soft, stand-up landing.

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

I suppose it was reading a lot of superhero comic books as a child—as an adult, I can dress up in a colorful costume and fly. Although we are all falling relative to each other, skydivers can fly down, up, sideways …

Although, now—especially after my long layoff—I am no longer on the cutting edge. It is still an awful lot of fun! One day of skydiving clears the mind as much as a week of traipsing about a forest. And, as with other sports, there are age-related goals to be attained. Last year, I was part of a 20-way formation that, while not large in itself, was big enough to gain us the Pennsylvania state record for number of skydivers over the age of 60 linked up in freefall (all members of SOS=Skydivers Over Sixty). As I get back into full gear, I am looking forward to national records (for old folks, anyway).

Now for the numbers. When I was a doctoral student, Kung-Yee Liang made the astute observation that my skydiving career could be modeled by a geometric distribution: number of successes until a failure! In the U.S., there is about one fatality for every 165,000 jumps. Among people making a tandem jump (attached to someone who has a twice-as-large parachute), the risk is about 1/500,000. My personal risk is perhaps 1/250,000—worse than a tandem jump, as I am with others in the air and opening the parachute somewhat lower, but not as risky as it is for skydiving students or experienced jumpers who use higher-performance parachutes in ways that give little margin for error. Still, even with the meager 60 or so jumps I make each year (some people will make 1,000 in a year), that is about a 1/4,000 chance skydiving this year will keep me from skydiving next year. ■

Data Challenge 2017 Contestants Set to Present at JSM

Data Challenge 2017 contestants will highlight their analyses in a Joint Statistical Meetings speed poster session Monday, July 31, from 8:30 a.m. to 10:20 a.m. Each contestant will give a five-minute talk and then stand by their poster in the exhibit hall to answer questions and discuss their work with JSM attendees.

The Statistical Computing, Government Statistics, and Statistical Graphics sections sponsored Data Challenge 2017. The contest was open to anyone, including college students and professionals from the private or public sector. It challenged participants to analyze the Consumer Expenditure Survey from the Bureau of Labor Statistics using statistical and visualization tools and methods.

Winners of the challenge will be announced at the general membership meetings/mixers of the sponsoring sections. There will be two awards categories—professional (one level) and student (three levels).

Data Challenge 2016

Five contestants who participated in Data Challenge 2016 submitted papers for a special issue of *Computational Statistics*, which will be guest edited by Roya Amjadi of the Federal Highway Administration and Wendy Martinez of the Bureau of Labor Statistics.

Additionally, Amjadi—who continues to work with the 2016 contestants—facilitated a sponsorship from the Evaluation of Low Cost Safety Improvements Pooled Fund Study for Data Challenge 2016 winner Jonathan Auerbach to present his paper, "A Hierarchical Model to Evaluate Policies for Reducing Vehicle Speed in Major American Cities" to 40 state member representatives in June. The paper offers a new statistical methodology for highway safety evaluations and a fresh perspective on pedestrian safety improvement evaluation. ■

Committee on Career Development to Sponsor Soft Skills Panel

The ASA Committee on Career Development (CCD) will sponsor a professional development panel, titled "Statistical Soft Skills: They're Essential," at JSM in Baltimore this summer. Five prominent statisticians will serve as panelists, answering questions and discussing how to develop and use nonstatistical soft skills.

The committee is also co-sponsoring a session with the Section on Statistical Consulting, "Challenges and Reward of Major Career Changes."

Details of these two events can be found in the online program at *ww2.amstat.org/meetings/jsm/2017/onlineprogram.*

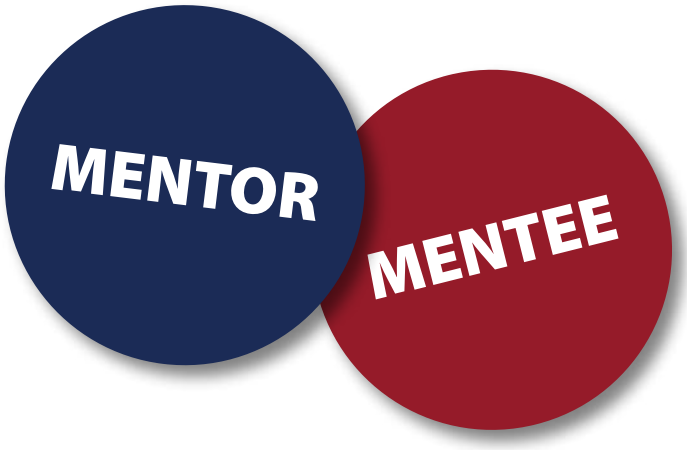
Members of the CCD will also staff an information table, answering questions and taking suggestions.

Looking Forward

CCD members will continue planning for JSM 2018—to be held in Vancouver, British Columbia—and search for other ways to support the membership. At present, CCD plans to launch webinars focused on the essential soft skills that can aid statisticians in their career development.

To offer suggestions about what the CCD can do to most affect your career development, contact a committee member or drop by the information table at JSM.

On-the-Go Mentoring Program to Be Launched at JSM 2017



If you have questions about the OTG mentoring program, contact Monica Johnston through the ASA Community, *http://community.amstat.org/home*. You'll have to log in to contact her directly.

The Caucus of Women in Statistics (CWS) will launch its new On-the-Go Mentoring (OTG) Program at JSM 2017. The goal of the mentoring program is to provide short-term job-related and career-related support to women who work in statistics and to provide referrals to other programs that offer long-term mentoring.

OTG does not require long-term mentoring commitments or use a matching process, so it may lead to a faster resolution of job and career issues that arise suddenly.

The OTG mentoring program consists of mentors who respond to job- and career-related questions by email. These mentors are mid-career and late-career members of CWS who volunteer for six-month terms. When faced with especially delicate or challenging questions, they may consult the mentoring program committee—five early-, mid-, and late-career mentors—for advice. After resolving a mentee's concern, a mentor may refer the mentee to a long-term mentoring program such as those operated by ASA committees, sections, and chapters.

The OTG mentoring program was developed by Nancy Flournoy, Monica Johnston, Stephine Keeton, Aleksandra Stein, and Jessica Kohlschmidt at the request of 2017 CWS president, Ji-Hyun Lee. Efforts to develop the program began in 2016.

Look for more information about OTG at the CWS information table at JSM. If you are interested in volunteering to be a mentor or a mentoring program committee member, contact Nancy Flournoy at *flournoyn@missouri.edu*. If you are seeking job or career support, visit the CWS website at *https://cwstat.org* and submit your request after JSM 2017. ■

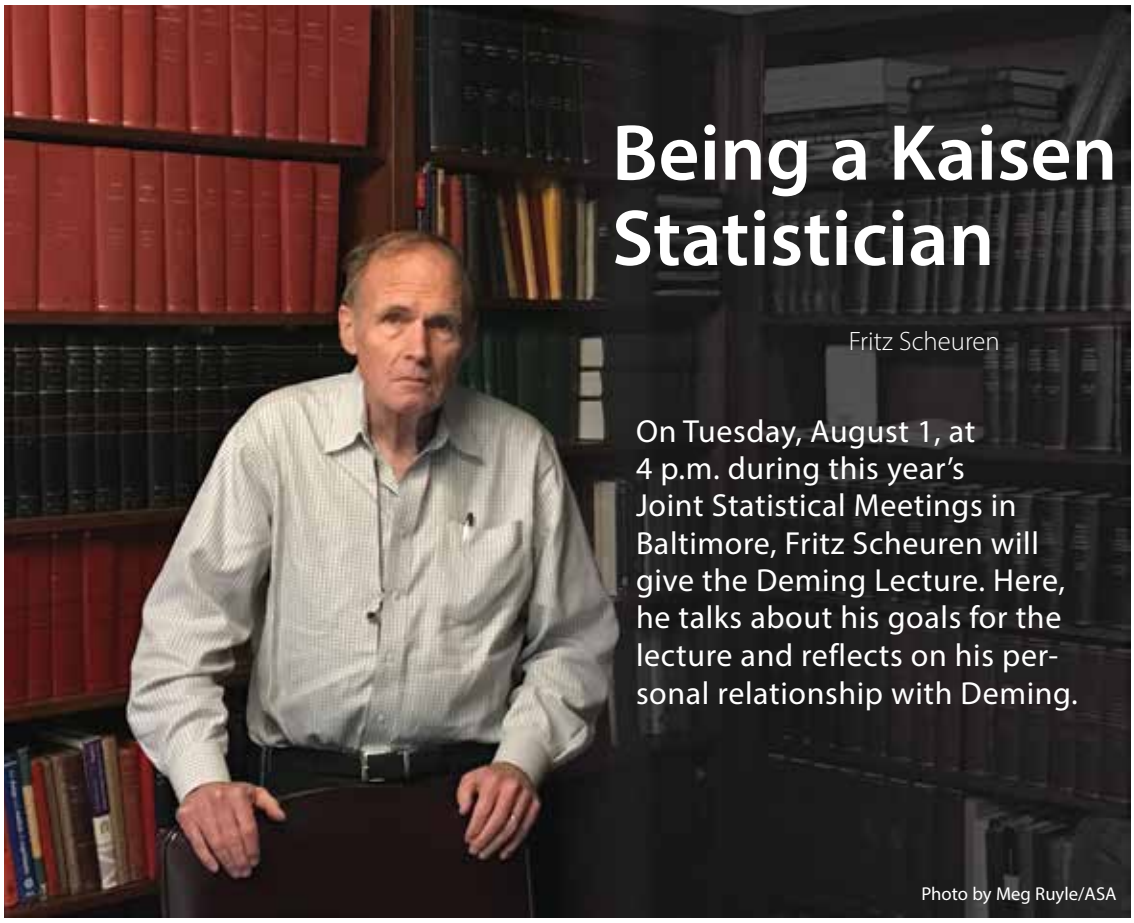
Data Science Conference Planned for October

Registration is open for the Data Institute San Francisco Conference (DSCO17), to take place October 15–17 in cooperation with the ASA.

DSCO17 aims to explore the latest theoretical advances and industrial applications in data science to promote the next generation of cross-disciplinary research.

The conference program includes 70 confirmed speakers, with 50% coming from industry and 50% from academia. Plenary speakers include Michael Jordan of the University of California, Berkeley, Anima Anandkumar of Amazon Web Services, and Jukka-Pekka Onnela of Harvard University. Invited session topics incorporate many contemporary areas of data science, including tracks in deep learning, network analysis, natural language processing, data science applications to the social good, compressed sensing, and data science in health care. Also planned are four workshops.

More information about the conference, as well as calls for contributed talks in deep learning and contributed posters, are available at *www.sfdatainstitute.org/conference.html*.



Being a Kaisen Statistician

Fritz Scheuren

On Tuesday, August 1, at 4 p.m. during this year's Joint Statistical Meetings in Baltimore, Fritz Scheuren will give the Deming Lecture. Here, he talks about his goals for the lecture and reflects on his personal relationship with Deming.

Photo by Meg Ruyle/ASA

Fritz Scheuren in the Deming Library at the ASA office in Alexandria, Virginia

I knew Deming when I was a young man and want to honor his memory and legacy by adding stories about him, even though now I too am old. Maybe, like the other Deming lecturers, I will attempt to bring back his spirit (a little)?

My hope is that generations yet unborn may also feel his passion for continuous improvement (Kaisen in Japanese). Incidentally, the self-respect he gave back to the Japanese after WWII may be his greatest achievement. That may be why they took the lecture fee he would not accept and used it to start their own Deming Prize—long before the ASA began this lecture series (see *https://en.wikipedia.org/wiki/Deming_Prize*).

Some Personal History

I was either not alive or too young to remember Deming in the '30s, '40s, and '50s, when he was a major force in U.S. federal government statistics, first at the U.S. Department of Agriculture (USDA) Graduate School and later at the U.S. Census Bureau. I was to first meet Deming in 1963. By then, he was already famous and I was just a U.S. government management intern at the Internal Revenue Service—my first professional job as a statistician. At the time, Deming was trying to change the agency I was to later lead, the IRS Statistics Division. (It started its 100th year last December.)

Deming's most significant contribution for me, then and now, was his constancy of purpose and unfailing personal generosity and humility. I will illustrate or offer an example of these in my lecture.

Deming has been rightly praised for his many contributions to the technology of modern survey sampling (e.g., raking ratio estimation) and his uncompromising emphasis on high quality through systems thinking. I have built on these in my work and will touch on them in the lecture. The second edition of my book on data quality with Tom Herzog and Bill Winkler develops these further.

I have read nearly all Deming wrote for general consumption and talked with or worked beside many of his colleagues, some of whom now, like me, might be called disciples (albeit never by him—he always carried his own bags).

I was the 100th ASA president and have carefully studied the speeches of the available Deming lectures before me (about half). My plan eventually is to collect them all into a Festschrift/book or a website. Then, I will try to fill in the gaps with my own—now long—life, emphasizing teachable moments, both good and bad. ■

MORE ONLINE
For more about Scheuren, read the interview by Katherine Condon in the June issue of the *Statistical Journal of the International Association for Official Statistics* at *www.iospress.nl/journal/statistical-journal-of-the-iaos.*

JSM 2018 Invited Session Proposals Sought

Christian Léger, JSM 2018 Program Chair

Christian Léger

As many of you are preparing to head to Baltimore for the 2017 Joint Statistical Meetings (JSM), it is already time to plan for JSM 2018, which will take place in Vancouver, British Columbia, Canada, from July 28 to August 2.

If you attended JSM 2010, you know that—given the exceptional scenery—it will be a challenge to keep participants inside the Vancouver Convention Centre, so JSM Program Committee members are counting on you to help them prepare the very best program.

Lisa LaVange, 2018 ASA president, has selected "#LeadWithStatistics" as the theme for JSM 2018. It promotes the idea that using statistics in the right way will improve any leaders' chances of success! Its hashtag format is a nod to the social media age we live in and to the new generation of statisticians and data scientists who will become the future leaders of our field.

At this time, the program committee is soliciting proposals for invited sessions to showcase some of the most innovative, impactful, and cutting-edge work in applied and theoretical statistics. The sessions can be oral presentations or panel discussions. Invited paper sessions consist of 2–6 speakers and discussants reporting new discoveries or advances in a common topic; invited panels include 3–6 panelists providing commentary, discussion, and engaging debate on a particular topic of contemporary interest.

The ideal session involves fresh, important work that many JSM attendees will find interesting. Many of the most stimulating sessions present diverse viewpoints and strategies on a common topic or problem, with speakers coming from different institutions or practices.

Many of you have probably never tried to organize an invited session, but why not try it this year? To organize a session, you should first set a theme of broad interest and identify and contact potential participants. Once these are arranged, you should write a proposal consisting of the title, a brief abstract/rationale, a list of participants, and tentative titles for the talks (titles can be changed later).

In planning a meeting attracting more than 6,000 statisticians, the program committee has to abide by a number of rules. When planning an invited session, please note that JSM has strict guidelines for participation (see *http://magazine.amstat.org/wp-content/uploads/2015/07/R-Participant-guidelines.jpg*). Talk to potential speakers to ensure they are not committing to multiple invited proposals.

There will be 181 invited sessions at JSM 2018. Most are allocated to the partner societies and ASA sections, which will select among the proposals submitted to each society or section. Note that most have a small number of invited sessions (1–4). After they make their selections, each ASA section will select up to two proposals to enter into a competition for the remaining spots on the invited program. It is therefore important to make your session proposal competitive with interesting topics and strong speakers, but also by providing a good description of the topic that committee members from other sections or organizations will appreciate in case the proposal goes into the competition.

Session proposals must be submitted via the JSM online system, indicating type of session and

#LeadWithStatistics


Photo by Sara Davidson/ASA

View from the convention center in Vancouver, British Columbia, Canada, where JSM 2018 will take place

proposed sponsor (partner society, ASA section, etc.). The online system will open July 18, and the deadline is September 6.

As indicated earlier, you will understand that for a meeting of this size, it is essential to follow strict deadlines and procedures. The invited session proposal form allows the organizer to select up to three sponsors in ranked order. This is to ensure a worthy proposal is considered by other sponsors if it is not selected by its designated primary sponsor.

Before submitting your proposal, you are encouraged to contact members of the program committee representing your chosen sponsors to discuss your proposal and see if they are willing to sponsor it given that most of the invited sessions will be selected by them. If you are a member of an ASA section or another sponsoring society, going through the corresponding representative is often a good way to proceed. But remember that only sessions submitted via the online system will be considered, so it is not enough to send your proposal by email to a member of the program committee. Decisions about the invited program will be made by the end of September. It is helpful to contact program committee members well ahead of the September 6 deadline.

An invited poster session consisting of up to 30 electronic posters will take place during the Opening Mixer. Presenters in this session have access to a monitor, rather than a traditional poster board, that provides a unique opportunity to interact one-on-one with other researchers. Ideas for invited posters should be sent to Paul McNicholas of McMaster University, who is associate chair for invited and contributed posters, at *paulmc@mcmaster.ca* or *jsm2018posterchair@gmail.com*.

I would also appreciate receiving good suggestions for two other important components of the JSM program: memorial sessions and introductory overview lectures (IOLs). A limited number of memorial sessions are planned at each JSM. Proposals can be submitted through the online invited session system (choose memorial session as sponsor). By doing so by the September 6 deadline, you can select other potential sponsors in case they would want to choose that session. In any case, I invite you to contact me if you are planning to submit a memorial session. Unless the session is selected by an organization or ASA section in September, decisions about memorial sessions will be made in the fall.

IOLs are high-quality introductions to timely and important statistical topics of broad interest to JSM attendees and usually attract large audiences. I invite you to contact me with suggestions for topics or speakers for these sessions. Note that IOL speakers can also present an invited or contributed paper, panel, or poster. You can reach me at *leger@dms.umontreal.ca*.

Thanks to the quality of the proposals sent by people like you, JSM offers a diverse, high-quality program that advances the knowledge of each participant. If you want to #LeadWithStatistics, Vancouver will be the place to be July 28 to August 2, 2018.

On behalf of all program committee members, I thank you in advance for helping us make JSM 2018 an event as fantastic as its location! ■

MORE ONLINE
You can find more information about types of sessions and proposal submission by visiting the JSM 2017 website at *http://ww2.amstat.org/meetings/jsm/2017/beontheprogram.cfm*.

African Statistical Conference Meets Needs Worldwide

Barry D. Nussbaum, ASA President

From left: Bimal Sinha, University of Maryland, Baltimore County; Yehenew Kifle, University of Limpopo; N.M. Mokgalong, University of Limpopo

An excellent set of presentations and meaningful dialogue were the hallmarks of the Fourth African International Conference on Statistics held in Limpopo, South Africa, March 20–23. The program was a joint venture of the University of Limpopo and University of Maryland, Baltimore County (UMBC).

Attendance numbered about 130, and, importantly, this attendance was sustained for the entire conference. The conference's central theme was "New Methods of Data Analysis with Applications to Big Data." The conference featured speakers from four continents and represented a vast exchange of information among academic professors, industry stalwarts, and eager students. Some of the featured talks addressed the statistical challenges of Big Data, strategies for dealing with Big Data, confidentiality of data, and "hidden data."

As with many conferences, the hallway, coffee break, and meal time conversations were most enlightening. But, in addition to these informal discussions, a spirited panel session titled, "How to Retain African Statisticians in Africa," concluded the conference. This session highlighted special concerns on the continent such as students frequently not having have sufficient funds to complete their undergraduate degrees, students with undergraduate degrees finding jobs in Africa and not pursuing higher degrees, and students pursuing higher degrees in the United States and not returning to Africa.

Perhaps the two most substantive comments about the conference were that it happened at all, and it is the fourth in as many years. While international conferences certainly are not new and the passports of many prominent statisticians have enough stamps to rival even State Department employees, Africa has not typically been the site for these. So what was the breakthrough? The catalyst for these conferences was not found in Africa, but, somewhat remarkably, in Baltimore!

The UMBC Mathematics and Statistics Department and its statistics program founder, Bimal Sinha, recognized the need to include the growing number of African statisticians into the many conferences and information exchanges. Several African students had successfully completed their PhD studies at UMBC, and it seemed apparent further involvement of African students was warranted. Sinha, along with his UMBC statistics colleagues, engaged African colleagues and, with considerable and persistent actions, the first conference was held in 2014 in Senegal. Its success was followed by more well-attended conferences in Ethiopia (2015), Cameroon (2016), and South Africa (2017).

As ASA president, I was honored to be invited as chief guest and asked to address the conferees on the first day. I think of this as another ASA activity designed to meet the needs of statisticians worldwide. We are undertaking a major initiative to assist Asian statisticians. This conference demonstrates the obligation and ability of the ASA to serve our profession across the globe. ■

Karl Peace Named *Statesboro Herald* Humanitarian of the Year

Holli Deal, *Statesboro Herald*

The 2017 *Statesboro Herald* Humanitarian of the Year "moved our community to new heights of caring," said Billy Hickman during the 29th annual Deen Day Smith Service to Mankind Awards gala held at Georgia Southern University's Nessmith-Lane Continuing Education building.

After sharing the biblical story of the Good Samaritan, Hickman praised Karl Peace as "a true public health hero" who not only influenced and helped the community, but also "the world."

Peace spoke briefly as he accepted the award.

"This is quite a surprise," he said. "I am very humbled and very appreciative."

Peace "has given over $8 million to Georgia Southern University (GSU) in various ways, helped develop numerous medications that have likely saved countless lives, and inspired and enabled hundreds to obtain degrees in various medicine-related fields," Hickman said. "He began college at GSU in 1959 with a loan of $532 that paid for two quarters of tuition. For his third quarter, he secured a Georgia State Teacher's scholarship, and, throughout the rest of his college career at GSU, he achieved a Bachelor of Science in chemistry while he worked seven part-time jobs to pay for his schooling. This was also how he contributed to the support of his siblings and mother, who suffered from cancer," he said.

Peace "obtained a master's degree in mathematics at Clemson University, has taught at several colleges, and later obtained a PhD in biostatistics from the Medical College of Virginia," Hickman said.

In 1989, he started his own business—Biopharmaceutical Research Consultants—where he played a key role in development and approval of several medications that treat diseases and conditions such as Alzheimer's disease, hypertension, arthritis, anxiety, depression, and gastric ulcers.

"He is still an adjunct faculty member at several major universities and is active in public health education endeavors at Georgia Southern," Hickman said.

In 1998, Peace approached GSU with the idea of a biostatistics center, a graduate-level study program in biostatistics, and development of a school of public health. "He gave up a $1.5 million annual salary with his own company to return to his alma mater in 2000 when GSU offered a master's degree in biostatistics, which he helped develop," Hickman said. "He endowed the Jiann-Ping Hu College of Public Health at GSU, named for his late wife."

Peace has since then continuously recruited, promoted, and helped establish the college with his endowment. It was the first college of public health in the University System of Georgia.

"We have done remarkably well … in the past 10 years," Peace said. "We currently have just under 500 students, over 40 faculty, and, since 2007, we have awarded nearly 500 degrees" to students who have "sustained very rewarding careers in many fields."

The Board of Regents named the university's biostatistics center the Karl E. Peace Center for Biostatistics, "honoring him for his endless contributions of time, finances, and support," Hickman said. "He has established 21 endowments at five different institutions—14 of those at Georgia Southern University."

Peace also supports the Boys and Girls Club of Bulloch County, where he volunteers, tutors, mentors, and offers financial support. He helped raise $265,000 after the club lost a critical grant, matching at least $90,000 in donations personally. He helps members with math and has helped six graduate assistants with their grant-writing applications. Peace also chaired the club's capital campaign in 2009 and 2011. The Boys and Girls Club of Bulloch County named its academic achievement center for him.

"Dr. Karl Peace has donated to, supported, and volunteered for several entities, including Goodwill Industries, the Salvation Army, American Cancer Society, Memorial Health University Medical, Mayo Clinic, the Alzheimer's Association, United Way, Disabled Veterans, American Red Cross, and Easter Seals." Hickman said. "He gave a donation to the local Hearts and Hands Clinic for $5,000 and has donated millions to education and health-related activities, enabling hundreds to obtain degrees. He also supports Komen for the Cure, the Georgia Cancer Coalition, and the Southwest Georgia Cancer Coalition," Hickman continued.

"This is very special," Peace said as he accepted the award. "Thank you very much." ■

MORE ONLINE
Read about Peace's life and work at *http://magazine.amstat.org.*

Editor's note:
This article was reprinted with permission from the *Statesboro Herald.*

Katherine Wallman to Receive 2017 Julius Shiskin Award

Robert P. Parker, Julius Shiskin Award Selection Committee Chair

Wallman

Katherine Wallman was recently selected to receive the 2017 Julius Shiskin Memorial Award for Economic Statistics. The award recognizes unusually original and important contributions to the development of economic statistics or the use of statistics in interpreting the economy. Wallman is being recognized for strengthening the independence of U.S. statistical agencies, expanding confidentiality protection, improving the quality and usability of official statistics, increasing collaboration among the statistical agencies, and improving the reliability and comparability of official statistics throughout the world.

Wallman, who recently retired after 24 years as Chief Statistician at the Office of Management and Budget (OMB), greatly contributed to the development of all types of statistics, the effective management of statistical programs, and the improvement of users' understanding of official statistics. In addition to strengthening the independence of U.S. statistical agencies by issuing new statistical policy directives, expanding confidentiality protection with new legislation, and improving the reliability and comparability of official statistics throughout the world, she defended the budgets of economic and demographic statistics programs and championed the training of future leaders of the federal statistical system. She also successfully directed important cross-agency projects, a major accomplishment given that each of the main U.S. statistical agencies reports to its own parent cabinet-level agency. Wallman unified this decentralized system through her vision and leadership; her ability to build respect and trust at all levels; and her grace, charm, and good humor.

Wallman is the 45th recipient of the Shiskin award and will be honored at events hosted by the Washington Statistical Society, National Association for Business Economics, and ASA Business and Economics Section.

The independence of U.S. statistical agencies was reinforced under Wallman's leadership by the introduction of two statistical policy directives. "Fundamental Responsibilities of Federal Statistical Agencies and Recognized Statistical Units," issued in December 2014, is based on the National Academy of Sciences "Principles and Practices for a Statistical Agency" and provides OMB's endorsement of these practices, which include requirements for departments to allow their statistical agencies to operate independently.

"Release and Dissemination of Statistical Products Produced by Federal Statistical Agencies," issued in March 2008, is modeled on Statistical Policy Directive No. 3, which covers the release and dissemination of the principle economic indicators. It directs agencies to follow procedures to protect the integrity and independence of other statistical products. Wallman supported Directive No. 3, which requires advance public notification of release dates, timely preparation of news releases, and restrictions on pre-release access.

The new policy directives have enabled statistical agencies to operate independently and provide the public with assurances that their products will be objective and reliable.

Wallman also led the effort to enact the Confidential Information Protection and Statistical Efficiency Act (CIPSEA) of 2002. The act enhanced the confidentiality of official statistics and allowed limited data sharing of business information. It provided all statistical agencies confidentiality provisions similar

to those for data collected by the Census Bureau under Title 13 and allowed limited data sharing of business information among the Census Bureau, Bureau of Labor Statistics (BLS), and Bureau of Economic Analysis (BEA). After its passage, Wallman worked with these agencies and the Council of Economic Advisers to enact additional legislation (Data Synchronization) that would permit the Census Bureau to share selected business tax information with BLS and BEA. This led to further improvements to the quality of economic statistics.

Additionally, Wallman led the development and implementation of the North American Industry Classification System (NAICS), which was adopted in 1997. This accomplishment required cooperation among U.S. statistical agencies, Canada, and Mexico. She established an organizational structure to develop the system for the United States, and then led successful negotiations with the other countries. NAICS fundamentally changed the way economic activity is classified, recognized the growing importance of services, and provided a framework for measuring the 21st-century economy. It also made U.S. economic statistics close to fully comparable with those of Canada and Mexico to the benefit of users in the three countries.

Wallman, in 2002, also championed development of the North American Product Classification System (NAPCS), a comprehensive market-based framework for classifying goods and services. She facilitated the efforts of BEA, BLS, and the Census Bureau, as well as the statistical offices of Canada and Mexico, in collecting product data in the Economic Census that met the needs of business and academic users, the Producer Price Index program, and the National Accounts. The Census Bureau is planning to implement NAPCS products for all sectors in the 2017 Economic Census.

Wallman increased agency collaboration through her leadership as chair of the Interagency Council on Statistical Policy (ICSP) and her direction of the OMB-sponsored Federal Committee on Statistical Methodology (FCSM). The ICSP, recognized in legislation in 1995, consists of the heads of the principal statistical agencies and is OMB's main vehicle for coordinating cross-cutting statistical work, exchanging information about agency programs and activities, and obtaining advice and counsel for OMB on statistical matters. In the past year, topics included data systems modernization, alternative sources for official statistics, supporting the new Commission on Evidence-Based Policymaking, training the future federal statistical system workforce, the Cybersecurity Enhancement Act, and federal statistical research data centers.

The FCSM, founded in 1975, also assists OMB in carrying out its role in setting and coordinating statistical policy. It informs and advises OMB on the need for and content of methodological and statistical policies and supports cooperative research across agencies on issues relevant to federal statistics. It also publishes statistical policy working papers and proceedings from FCSM seminars and conferences.

In addition to her many contributions to the U.S. statistical system, Wallman also served as a U.S. representative to international statistical organizations. She was chair of the UN Statistical Commission from 2004–2005, chair of the Conference of European Statisticians, UN Economic Commission for Europe, from 2003–2007; and vice chair of the Statistics Committee, Organization for Economic Cooperation and Development, from 2009–2011. Under her leadership, the Statistical Commission adopted the Fundamental Principles of Official Statistics, an important step for many countries in establishing and improving statistical services and supporting the independence of statistical offices. She also helped lead an update of the System of National Accounts and System of Environmental-Economic Accounts.

Prior to becoming Chief Statistician, Wallman served for more than a decade as the first executive director of the Council of Professional Associations on Federal Statistics, where she was an early supporter of the Joint Program for Survey Methodology (JPSM) and the Census Bureau's research data centers. Her continued support of JPSM enabled the inclusion of short courses in economic statistics, as well as degree programs in statistical and survey methods that are central to the functioning of agencies producing economic statistics.

Wallman twice received the Presidential Meritorious Executive Award, as well as the OMB Robert G. Damus Award, Population Association of America's Excellence in Public Service Award, and ASA Founders Award. She is an elected fellow of the ASA and American Association for the Advancement of Science. She served as ASA president and as a founding member of the International Association for Official Statistics. She earned a BA from Wellesley College. ■

The 2017 recipient of the Roger Herriot Award for Innovation in Federal Statistics is **John Eltinge.** He is being recognized for his important and extensive contributions to statistical methodology and practice at the Bureau of Labor Statistics (BLS) and within the federal statistical system.

Specifically, Eltinge has made two fundamental contributions. The first centered on his 17 years of service at BLS, including more than 12 years as the associate commissioner for survey methods research. In that capacity, he led a cadre of talented statisticians and behavioral scientists. Acting upon his vision, that group contributed to significant modernization and improvement of many BLS programs in collaboration with personnel from program offices, statistical methods divisions, and field operations. Examples include work with the Current Employment Statistics Program, Consumer Expenditure Survey, and Occupational Employment Statistics Program.

Additionally, Eltinge chaired an agency-wide team in charge of reducing disclosure risk, and he kept this issue visible and central to BLS leadership. Also, he fostered work by colleagues in his office that led to publication of seminal papers in the *Journal of the American Statistical Association, Annals of Applied Statistics,* and *Journal of Official Statistics.* His success in these efforts led to his selection as the assistant director for research and methodology at the U.S. Census Bureau in December 2016.

The second major set of contributions arose from his leadership with interagency, international, and editorial work. Examples included his contributions as the chair of the Subcommittee on Administrative Records of the Federal Committee on Statistical Methodology; work on program committees for workshops on data collection for the United Nations Economic Commission for Europe and statistical conferences; and service as an associate editor of the *Journal of the American Statistical Association, The American Statistician, Journal of Official Statistics,* and *Survey Methodology Journal.* This work led to his appointment as chair of the Federal Committee on Statistical Methodology from January of 2017 to December of 2018.

The award presentation will be made during the JSM session The New Multiple Data Sources Paradigm for Federal Statistics, scheduled for 10:30 a.m. on August 1.

Herriot was the associate commissioner of statistical standards and methodology at the National Center for Education Statistics when he died in 1994. Soon after his death, the ASA Social Statistics and Government Statistics sections, along with the Washington Statistical Society, established the award, which is intended to recognize individuals or teams who, like Herriot, develop unique and innovative approaches to the solution of statistical problems in federal data-collection programs. ■

Read more about Herriot's life and view the names of other winners at *http://washingtonstatisticalsociety.org/awards/herriot.html.*

Submitted by Kevin Konty

Sarah Tan, a doctoral student in the statistics department at Cornell University, is the winner of the 2017 Wray Jackson Smith Scholarship.

Tan graduated with a bachelor's degree in statistics and economics from the University of California, Berkeley, and a master's degree in statistics from Columbia University. She is a first-year PhD student in statistics at Cornell University. She

Sara Tan

was also a 2014 Data Science for Social Good Fellow and has spent summers at Xerox Research and Microsoft Research.

Tan's interests lie at the intersection of statistics and machine learning. She is particularly interested in public policy applications, especially government statistics where causal inference is needed for impact evaluation and policy planning. She is also interested in how government data from various scales—federal, local, and across agencies—can be synthesized to obtain better estimates

Tan has worked on several research projects with New York City (NYC) agencies, including implementing a Bayesian evidence synthesis framework to estimate hepatitis prevalence. This effort brought together information from a variety of sources that had been analyzed separately. Tan has also worked with the NYC Health and Hospitals Corporation, analyzing hospital readmissions and providing feedback to hospital administrators.

For her dissertation, Tan is developing methods for causal inference using observational data, including new balancing scores based on tree ensembles for complicated treatment selection processes, and ways to incorporate the uncertainty of the treatment selection model into the outcome model. She will work with the NYC Office of School Health to apply these methods to the potential effects of later school start times. Tan

plans to use the Wray Jackson Smith Scholarship to support this project, including transportation costs to New York City and future conferences. ■

Daniel Heitjan

At the 2017 Conference of Texas Statisticians, the San Antonio Chapter recognized the 2017 Don Owen Award winner, **Daniel F. Heitjan** of the department of statistical science at Southern Methodist University (SMU) and department of clinical sciences at the University of Texas Southwestern Medical Center (UTSW).

Heitjan is an expert in statistical methods for incomplete data, clinical trials, and health economics. He has engaged in substantial collaborative and methods research in oncology, cardiovascular medicine, and smoking cessation; published roughly 200 journal articles in statistics and medicine; and given more than 150 invited talks. He has also provided statistical consultation to the pharmaceutical and finance industries.

Heitjan has taught various biostatistics courses and directed biostatistics graduate programs at the University of Pennsylvania and SMU/UTSW. His 16 doctoral trainees have gone on to careers in academia, industry, and government.

Additionally, Heitjan has served on numerous scientific review committees for the National Institutes of Health and Agency for Healthcare Research and Quality. He has also served as an associate editor of leading statistical and scientific journals, including the *Journal of the American Statistical Association*, *Statistics in Medicine*, *Clinical Trials*, *Journal of the National Cancer Institute*, and *Annals of Applied Statistics*) and is currently senior statistical editor of *Circulation*, the flagship journal of the American Heart Association. His involvement in professional activities in statistics includes serving as program chair of the 2005 Joint Statistical Meetings, chair of the ASA Biometrics Section (2009), and president of the Eastern North American Region of the International Biometric Society (2013). He is a fellow of the ASA (1997), IMS (2012), and Society for Clinical Trials (2017)—only the third person in history to be elected fellow in all three societies.

Heitjan accepted the award and gave a biographical presentation in which he expressed his gratitude his family and to mentors Donald B. Rubin of Harvard University, J. Richard Landis of the University of Pennsylvania, and the late Paul Meier. ■

Marie Davidian Delivers Brogan Lecture

From left: Amita Manatunga, Marie Davidian, Donna Brogan, and Lance Waller

Professionals and students from Emory University, the U.S. Centers for Disease Control and Prevention, and the larger Atlanta area gathered at the Rollins School of Public Health (RSPH) April 10 to hear Marie Davidian present the 2017 Donna J. Brogan Annual Lecture. The title of her talk was "The Right Treatment for the Right Patient (at the Right Time): Precision Medicine Through Treatment Regimes and SMARTs (i.e., Sequential Multiple Assignment Randomized Trials)."

Davidian explained the statistical model and estimation procedure for a randomized trial that recognizes common physician behavior in treating chronic diseases such as cancer, depression, and addiction. That is, if the first treatment (A) works, then continue with A or perhaps change to treatment B. If A does not work, then try treatment C. There may be additional sequential treatments depending on responses to previous treatments, and the model also incorporates patient characteristics at baseline and during treatment.

Davidian is William Neal Reynolds Professor of Statistics at North Carolina State University. She is a respected and acclaimed academic statistician who has received numerous professional awards that recognize her research, teaching, service, and leadership contributions.

Donna Brogan is professor emerita of biostatistics at RSPH. Following her 2004 retirement from Emory, she and her colleagues, friends, and family funded the annual lecture in biostatistics to honor her career. Twelve lectures have been presented to date, including a presentation by Brogan in 2015 about current challenges and future directions of sample survey methodology.

Obituary

Peter Homel

Peter Homel—born July 29, 1953, Philadelphia, Pennsylvania—died April 24, 2017, in New York City after a vigorous battle with bacterial blood infection.

Homel was senior biostatistician research administrator at Maimonides Medical Center. He was the beloved son of the late Peter and Maria Schabelniuk Homel, husband of the late Laura Brighenti, devoted father to William, brother to Michael (Sandy), and uncle to Katrina. He will be greatly missed by family, friends, and colleagues. ■

Obituary

Alastair Scott

Ilze Ziedins, Chris Wild, and Chris Triggs, University of Auckland

Alastair Scott, one of the finest statisticians New Zealand has produced, died in Auckland, New Zealand, on May 25. He served the University of Auckland with distinction from 1972–2005.

Scott's research was characterized by deep insight, and he made pioneering contributions to a wide range of statistical fields. He was acknowledged, in particular, as a world leader in survey sampling theory and the development of methods to efficiently obtain and analyze data from medical studies. His methods are applied to a range of areas, notably in public health. Beyond research, he contributed prolifically to the statistical profession in academia, government, and society.

Scott was a fellow of the Royal Society of New Zealand, American Statistical Association, Institute of Mathematical Statistics, and Royal Statistical Society. He was also an honorary life member of the New Zealand Statistical Association. In November of 2016, he was awarded the Royal Society of New Zealand's Jones Medal, which recognized his lifetime contribution to the mathematical sciences.

Scott earned his first degrees at the University of Auckland: BSc in mathematics in 1961 and MSc in mathematics in 1962. After a period at the New Zealand Department of Scientific and Industrial Research, he pursued a PhD in statistics at the University of Chicago, graduating in 1965. He then worked at the London School of Economics from 1965–1972.

In 1972, Scott returned to New Zealand to a post in what was then the department of mathematics and statistics at the University of Auckland; he and wife Margaret had decided they wanted to raise their children, Andrew and Julie, in New Zealand.

Throughout his career, Scott was regularly offered posts at prestigious universities overseas, but turned them down. However, he held visiting positions at Bell Labs; the universities of North Carolina, Wisconsin, and California, Berkeley, in the United States; and the University of Southampton in the United Kingdom.

In 1994, the university's statistics staff, led by George Seber, had an amicable divorce from the department of mathematics and statistics, and Scott became the head of the new department of statistics. He helped set the tone for the department that still exists—hard-working, but welcoming and social. The department of statistics is now the largest such school in Australasia.

In 2005, Scott officially retired. A conference in Auckland that year in his honor attracted the largest concentration of first-rank international statisticians in New Zealand in one place at one time. Scott kept an office in the department and continued writing and advising, coming into work almost every day.

Scott was an influential teacher and generous mentor to several generations of statisticians who valued his sage advice coupled with his trademark affability. He had a full life professionally and personally. He was a wonderful teacher, mentor, colleague, and friend. We will all miss him greatly, and we extend our sincere condolences to Margaret; Andrew; Julie; and his family, friends, and colleagues all over the world. ■

Obituary

Monroe Sirken

Monroe Sirken, a longtime and active member and fellow of the ASA, passed away on May 24, 2017.

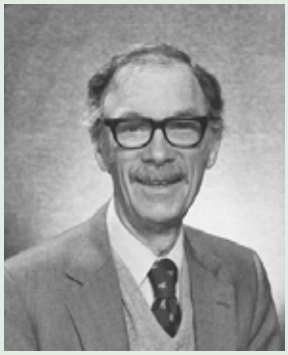
Born January 11, 1921, in New York City, Sirken grew up in a suburb of Pasadena, California. He earned BA and MA degrees in sociology at the University of California, Los Angeles, in 1946 and 1947 and a PhD in sociology with a minor in mathematics in 1950 at the University of Washington, where Z. W. Birnbaum was his mentor and thesis adviser. As a postdoctoral fellow of the Social Science Research Council, Sirken spent 1950–1951 at the statistics laboratory of the University of California, Berkeley, and the office of the assistant director for research at the U.S. Census Bureau in Suitland, Maryland.

Sirken visited the Census Bureau at a time of great change in the use of sampling and survey methods and decided to remain. He began his government career there in 1951 as a mathematical statistician and moved to the National Office of Vital Statistics, where he was an actuarial mathematician and mathematical statistician, in 1953. Sirken held a variety of research and administrative positions at the National Center for Health Statistics (NCHS) and was the associate director of research and methodology and director of the Office of Research and Methodology until 1996, when he became a senior research scientist. He retired from that position in 2011.

Aside from administrative responsibilities, Sirken's major professional interests were conducting and fostering survey and statistical research responsive to the needs of federal statistics. His interest in the design of rare and sensitive population surveys led to the development of network sampling that improves precision by linking multiple selection units to the same observation units. His interest in fostering research on the cognitive aspects of survey methods led to the establishment of permanent questionnaire design research laboratories, first at NCHS and later at other federal statistical agencies here and abroad.

Sirken was active in serving the statistical community. He served on many ASA and Washington Statistical Society committees. A charter member of the Federal Committee on Statistical Methodology, he chaired its research subcommittee that oversees a grants program in statistical and survey research funded by a consortium of federal statistical agencies and administered by the National Science Foundation.

Sirken was a fellow of the American Statistical Association and American Association for the Advancement of Science and an elected member of the International Statistical Institute. He was a recipient of the Public Health Service Superior Service Award, Roger Herriot Award for Innovation in Government Statistics, and Federal Committee on Statistical Methodology distinguished service award.



Sirken

Read more about Sirken's life and work in "A Conversation with Monroe Sirken—His Early Career" at *http://magazine.amstat.org/blog/2011/09/01/monroesirken* ■

Ann Arbor, Detroit Chapters Judge Michigan Science and Engineering Fair

Karry Roberts, Detroit Chapter Secretary

From left: ASA Judges Karry Roberts, Mary Ann Ritter, David Corliss, Anamaria Kazanis, and Lance Heilbrun

Students receive $100 awards of merit at the Michigan Science and Engineering Fair.

Upgrading our longstanding annual tradition, members of the Ann Arbor and Detroit chapters went to the state level of competition this year as a special awards judging committee recognizing statistical content in the science posters at the Michigan Science and Engineering Fair (MSEF).

The fair was held at Kettering University in Flint, Michigan, on April 1. The MSEF displays the best high-school-level posters from the regional science fairs. Students are present to explain their projects, and winners in various science categories go on to the Intel International Science and Engineering Fair (ISEF) in Los Angeles.

This year, MSEF had 48 posters. It was an all-day event, with an award ceremony at the conclusion. We announced our statistics usage awards as part of this ceremony and invited the students to come up onto the stage.

Our team of seven statistics judges included Anamaria Kazanis, Karry Roberts, Lance Heilbrun, and David Corliss from the Detroit Chapter and Mary Ann Ritter, Changying (Angela) Liu, and MacKenzie Fankell from the Ann Arbor Chapter.

As a special awards team, we were specifically looking to "promote the practice and profession of statistics." We reviewed all posters and discussed applications of statistics with the students who were present. We selected those posters with good statistical content for recognition certificates and decided as a group which posters had the most effective use of statistics for our scholarship awards. Thanks to an anonymous donor from the Ann Arbor Chapter, funds from the two chapters, and support from the ASA Chapter Stimulus Fund, we were able to give the following awards:

$500 Award of Excellence

Malini Mukherji from Notre Dame Preparatory School for "Determining Light Source Location Using Machine Learning and Solar Cells"

$250 Award of Merit

Clara Wagner from Saginaw Arts & Sciences Academy for "Investigating Tuned Magneto-Rheological Reservoirs, Compression Systems"

$100 Awards of Merit

- **Aarushi Ganguly** from Greenhills School for "Bayesian Probability Technique to Estimate Schizophrenia Genes"
- **Rohit Mital** from Indus Center for Academic Excellence for "Mat Innovation for Mounting Ceramic Substrates"
- **Tina Pakko** from Dearborn Center for Mathematics, Science, and Technology for "Wind Noise Reduction Device for the Hearing Impaired"
- **Collin Wang** from Detroit Country Day School for "Measuring Expression for Novel Variations in Enhancers Using STARR"
- **Hongxiang Zhao** from Detroit Country Day School for "An Integrated Approach to Novel TSP-Based Clustering Algorithms"

Additionally, we gave 14 recognition certificates with copies of *Significance* magazine.

Five of our special awards students will attend the ISEF as recipients of the Grand Awards from the state or regional level of the science fair. Clara Wagner was a State Grand Award winner, Malini Mukherji was a Regional Grand Award winner, and three of our recognition students were selected as Regional Grand Award winners.

This event was an extension of special awards judging the Detroit and Ann Arbor chapters have done for several years when the smaller Southeast Michigan Science Fair was held for a subset of counties in Southeast Michigan. This year, that fair did not occur and those counties were included in the much larger regional science fair at Cobo Hall in Detroit. Instead of having our small team take on the very large regional Cobo Hall event, we chose to judge at the MSEF. ■

Sixth Annual Thomas R. Ten Have Symposium Offers Room for Discussion

Martina Pavlicova and Adam Ciarleglio

Ten Have

The annual Thomas R. Ten Have Symposium on Statistics in Mental Health took place May 12 at New York University and was hosted by the division of biostatistics in the department of child and adolescent psychiatry.

The annual event was founded in 1999 by Thomas R. Ten Have and Eva Petkova as a forum for statisticians working in the field of psychiatric research and, more generally, in mental health research to discuss ideas about new statistical methodologies and challenges. It includes participants from Columbia University, New York University, the University of Pennsylvania, Yale University, and Cornell University.

Thomas Ten Have passed away in 2011. To honor his many contributions to statistics in psychiatry and the statistics profession, the symposium was renamed the Thomas R. Ten Have Symposium on Statistics in Mental Health (a.k.a. TTH symposium).

Every year, the talks given by the invited speakers cover a variety of areas in biostatistics. This year's symposium was kicked off by Todd Ogden from Columbia University, who presented "Functional Data Modeling of Dynamic PET data to Characterize Psychiatric Disorders." After lunch, Mary Sammel from the University of Pennsylvania gave a talk titled "Challenges Associated with Defining Time-Dependent Exposures and Outcomes: A Case Study."

Additionally, Haiqun Lin from Yale presented "Longitudinal Mediation Analysis with Latent Class Mediators" and Judy Zhong from New York University presented "Trajectories and Change Points of Daily Function and Cognition with Aging in the Health and Retirement Study Cohort."

The symposium ended with a keynote presentation by Irini Moustaki from the London School of Economics, who spoke broadly about the history and challenges of psychometrics research. Moustaki also shared some of her recent work in latent variable modeling and its application to missing data problems.

These talks highlighted the important role of biostatistics in psychiatric and mental health research.

The organizers of this year's TTH symposium—Melanie Wall from Columbia University, Haiqun Lin and Ralitza Gueorguieva from Yale University, Justine Shults and Warren Bilker from the University of Pennsylvania, and Eva Petkova of New York University—emphasized the importance of discussion among biostatisticians in attendance and made sure each talk was followed by ample time to ask questions. To promote future and existing collaborations, the symposium concluded with an open bar happy hour at a nearby bar, followed by dinner at a Lebanese restaurant in Midtown Manhattan. A highlight of the evening was a traditional belly-dancing performance.

ASA Statisticians Judge, Award Students in Competition

From left: Olga Korosteleva (president, SCASA), second-place winner Tejas S. Athni, third-place winner Isani Singh, and Gajanan Bhat (president, OCLBASA) at the Special Awards ceremony. First-place winner, Davey Hideo Huang, was unable to attend the awards ceremony.

Statisticians from three southern California chapters — Southern California, Orange County/Long Beach, and San Diego— participated in the 2017 Intel International Science and Engineering Fair (ISEF), held May 14–19 in Los Angeles.

Students participating were in grades 9–12 and earned the right to compete by winning a top prize at a local, regional, state, or national science fair. More than 40 southern California judges evaluated 1,400+ science projects by students from more than 70 countries who represented virtually every scientific and engineering discipline (because statistics is used in every discipline).

On the first day of reviews, 34 judges screened all 1,400+ projects and selected about 170 that incorporated detailed statistical analysis. From this group, 26 projects were selected for the final interview round the next day. On Wednesday morning, 18 judges were ready at 7:15 a.m. to conduct interviews with the finalists. Working in teams of three, the judges selected the three winners and awarded honorable mention to the next best 13 of the rest.

The first-place winner was Davey Hideo Huang, a junior at Iolani School in Honolulu, Hawaii. His project title was "A Morphokinetic and Machine Learning Model for Aneuploidy Screening of Human Preimplantation Embryos." He used time-lapse imaging of in vitro developing embryos to identify novel morphokinetic markers for aneuploidy. He then used multivariate logistic regression, neural networks, and support vector machines to develop a simple, non-invasive, inexpensive, and accurate model to screen for aneuploidy with high discriminative capabilities offering significant improvements over current state-of-the-art screening. Huang received $1,500 from the ASA and a Grand Award "Best in Category" in the Cellular and Molecular Biology category.

The second-place winner was Tejas S. Athni, a junior at Stratford Academy in Macon, Georgia, who received $1,000 for "Inhibiting the Proliferation of Patient-Derived Glioblastoma Multiforme (GBM) Cells and U-87 MG Cell Line Using Leaf Extract of *Bacopa monnieri*."

The third-place winner was Isani Singh, a junior at Cherry Creek High School in Greenwood Village, Colorado, who received $500 for "Hospitalization in Women with Turner Syndrome." Singh also received a Grand Award "second

in category" in the Biomedical and Health Science category.

The full list of Special Awards winners and their prizes can be viewed at *http://bit.ly/2qPolxb,* while the list of Grand Awards winners and their prizes can be viewed at *http://bit.ly/2tpr3IS*.

Olga Korosteleva (president, Southern California Chapter) of California State University, Long Beach, and Gajanan Bhat (president, Orange County/Long Beach Chapter) of Spectrum Pharmaceuticals, Inc. attended the Special Awards ceremony to present ASA certificates to the winners. All winners and honorable mention awardees received one-year student memberships to the ASA, including one-year subscriptions to *Significance* and *CHANCE*.

Many judges found the experience rewarding. They said they were energized and transformed by the breadth and depth of the research methods and concomitant inferential analysis applied to address pressing issues in areas as diverse as health care, energy, materials sciences, plant sciences, molecular biology, computational biology, and many others.

The students' project boards included background literature, purposeful hypotheses, detailed analysis and results, and integrated conclusions. Especially impressive were the nonparametric and machine-learning tools some students brought to bear on their research problems. Methods such as principal components analysis and others, far beyond the scope of K–12 and even some undergraduate statistics coursework, brought a sophisticated and modern perspective to these meaningful science and engineering projects.

Judges were also impressed with the diversity of students, including groups from Pakistan, Egypt, Indonesia, Brazil, Uruguay, the Czech Republic, and historically under-represented areas in the United States such as Fresno, California.


Photos by Harold Dyck.

Statisticians enjoy the ASA-hosted dinner at the 2017 Intel International Science and Engineering Fair.

In addition to reviewing the projects, the judges participated in extended outreach to students beyond the top winners. During the first review of the projects, 400 of the most promising projects received a copy of *CHANCE* magazine and a certificate for a free ebook from O'Reilly Media. On the second day of review, students with the 100 most promising projects each received a book. The students were delighted to receive a book for their good use of statistics in their projects and seemed genuinely impressed that professional statisticians took notice of their work.

Thanks to continued support provided by the ASA Council of Chapters Governing Board, Tom Short from West Chester University of Pennsylvania presented a Monday symposium for ISEF finalists, teachers, and mentors. Approximately 100 people were in attendance as Tom gave a talk titled "Statistics: The Grammar of Science." After the symposium, enthusiastic finalists and teachers had many questions about specific science fair projects and the broader role of statistics in K–12 science education and beyond.

The ASA and its Pittsburgh Chapter will participate in next year's ISEF, which will be held in Pittsburgh, Pennsylvania May 13–18, 2018. Those who are interested in participating are encouraged to contact Rob Krafty at *rkrafty@pitt.edu*. ■

chapternews

San Francisco Bay Area Chapter

Chris Barker

The San Francisco Bay Area Chapter has organized chapter volunteers to give a lecture on careers in statistics to AP Statistics students at local high schools for the past eight consecutive years.

This year was unprecedented because of the number of volunteers (seven) and number of high schools (two) where lectures were given.

The volunteer speakers for 2017 include the following:

Sundar Dorai-Raj
Mike Crager
Debbie McCullough
Seth Michaelson
Mei Cheng
Nacer Abrouk
Chris Barker

To view pictures of each speaker and AP Statistics teacher, visit *https://goo.gl/photos/8QGqq9dv9mYUgcs97*. ■

San Antonio Chapter Recognizes Excellence at Science and Engineering Fair

The San Antonio Chapter sent judges to the 2017 Alamo Regional Science and Engineering Fair, held at St. Mary's University on February 24, to help select those senior division projects that showed excellence in the use of statistical methods.

The San Antonio Chapter presented the following awards at the ceremony:

First Place and $125
Sandra Moon, Lady Bird Johnson High School
"A Genetic Polymorphism in the PCSK9 Gene Associated with a Rapid HIV Disease Progression Among European- and Hispanic- Americans"

Second Place and $75
Adithya Mummidi, Keystone Upper High School
"Gene Expression Profiles of Subcutaneous Adipose Tissue, Skeletal Muscle Tissue, and White Blood Cells in Pre-Diabetic and Normoglycemic Mexican-American Individuals"

Third Place and $50
Isuru Somawardana, Keystone Upper High School
"Utilizing Cardiac and Pulmonary Function to Power a Pacemaker"

Judges, from left: (front row) Vincent Spadafore, Howard Monroe, and Jared Schettler (back row): John Schoolfield, Michael Mader, Danny Sharon, Steve Zinkgraf, and Jesus Cuellar-Fuentes

sectionnews

Biometrics

Edited by Zheyu Wang, Biometrics Section Publications Officer

The Biometrics Section will sponsor many CE courses and invited sessions at the 2017 Joint Statistical Meetings in Baltimore. The section is also a Silver Sponsor of the Diversity Mentoring Program. More information can be found at *http://community.amstat.org/cmis/events/dmp2017*. We also encourage member to consider applying for the next year.

Speaking of next year, it's time to start thinking about invited sessions for next year's Joint Statistical Meetings, which will be held July 28 – August 2, 2018, in Vancouver, British Columbia, Canada. Anyone interested in organizing an invited session or who has an idea for one should contact our section's 2018 program chair, Youyi Fong, at *youyifong@gmail.com.*

Please also submit ideas for short courses to our 2017–2018 continuing education chair, Rosemarie Mick, at *rmick@upenn.edu.*

Graph of the Month

We are piloting a feature in our monthly newsletter to introduce section members to topical content relevant to our section. This may take the form of statistical tools, statistics in the news, or relevant blog posts. If you have a suggestion for content you think may be of interest to section members, contact Rebecca Hubbard at *rhubb@upenn.edu*.

To see the graph of the month and read the latest Biometrics newsletter, download the PDF at *www.bio.ri.ccf.org/Biometrics/2017-06.pdf.* ■

Statistics in National Defense and Security

Alyson Wilson, a professor in the department of statistics at North Carolina State University, spoke at Smith College on March 31 as part of the SDNS Speakers Program. She discussed her work on assessing system reliability for complex U.S. Department of Defense systems and the application of data science to problems in the intelligence community. In addition, she participated in a Smith College Friday tea, where she discussed careers in statistics and data science with the students, and served as a mentor and judge in the Five College DataFest.

The SDNS Speakers Program provides travel support for statisticians who work in defense and security to give seminars describing their research in venues that will reach students. If you are interested in having an SDNS speaker, contact the SDNS Speakers Program chair, Jane Pinelis, at *jane.pinelis@jhuapl.edu*. ■

Physical and Engineering Sciences

Submitted by James Wendelberger, SPES Chair-elect, and Byran Smucker, SPES JSM Program Chair-elect

Making plans to attend JSM in Baltimore? Don't miss the SPES/Q&P business meeting Tuesday night in H-Key Ballroom 7 at 5:30, followed by a joint section mixer at 6:30 in the same room. The mixer is co-sponsored by the SPES, Q&P, Statistical Consulting, and Statistics in Defense and National Security sections.

The SPES program for JSM 2017 features five invited sessions, five topic-contributed sessions, five contributed paper sessions, one speed session, one contributed poster session, two roundtable sessions, and one continuing education course. For more information, check out the JSM 2017 online program at *ww2.amstat.org/meetings/jsm/2017/onlineprogram/index.cfm*. ■

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), $481 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*.

Florida

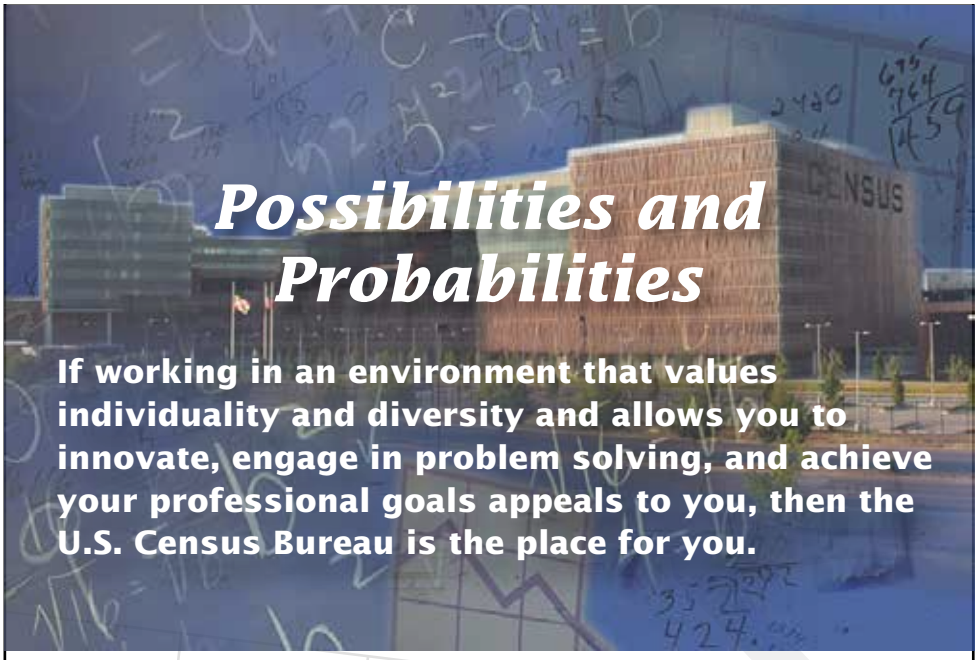
■ Assistant, Associate or Full Professor. UF is recruiting up to four tenure-track assistant, associate or full professor level positions within the department of biostatistics, administered by College of Medicine and College of Public Health and Health Professions. Qualifications include doctoral degree in biostatistics or related quantitative discipline and demonstrated excellence in research, teaching and service. Application review began on 06/01/2017. Please apply at *http://explore.jobs.ufl.edu/cw/en-us/job/502285*. The University of Florida is an equal opportunity institution dedicated to building a broadly diverse and inclusive faculty and staff. Hiring is contingent upon eligibility to work in the US. Searches are conducted in accordance with Florida's Sunshine Law.

New Hampshire

■ Postdoctoral Training Program, Quantitative Biomedical Sciences in Cancer, Geisel School of Medicine at Dartmouth invites applications for a multidisciplinary program preparing quantitative scientists for careers in cancer research. Candidates are appointed 2 yrs/min, stipends provided. Applicants must possess a PhD or MD degree and be citizens, non-citizen nationals or permanent residents of the U.S. Send applications to: *Vicki.Sayarath@Dartmouth.edu*. Dartmouth is an affirmative action/equal opportunity employer.

North Carolina

■ The Wake Forest School of Medicine Department of Biostatistical Sciences invites applications for a postdoctoral fellowship in biostatistics/bioinformatics. A PhD in biostatistics, statistics, or a related field is required. Candidates with expertise in statistical (epi)genetics and/or analysis of EHR data are encouraged to apply. Duties include collaboration and research. Interested individuals should email a research interest statement, CV, and 3 letters of recommendation to *dbsrecruit@wfubmc.edu*. The Wake Forest School of Medicine is an Equal Opportunity Employer.



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Washington

■ Cancer Research And Biostatistics (CRAB) is a non-profit organization whose purpose is to help conquer cancer. Our statistics department is looking for a dedicated senior biostatistician. The successful candidate will collaborate with fellow biostatistics staff and clinical investigators to design efficient clinical trials and determine the optimal methods for analysis of the data. View the duties and qualifications at *www.crab.org*. Remote work not available. EOE. ■

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SOCIAL CHATTER

We asked our followers:
How do you get motivated? Coffee? Tea? A good book?

Mario Cortina Borja • @cortina_borja
One litre of coffee between 0830 and 1230 and one litre of green tea between 1300 and 1600

Becky McNeil • @BiostatBecky
Coffee, tea, chocolate, matcha, spicy food, music. But messy data are surprisingly motivating all by themsleves. Rabbitholes!

Gonzalo Urrutia Deadlines

Omar Pasha Coffee with a good book

Kel Zou Student's 'tea' test!

Stephen Sugrue My student loan statements

Mark Walters Good books, not only one

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Next month's question: What's the best or worst statistics pun you've ever heard? Be sure to tag @AmstatNews in your response.

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