

November 2016 • Issue #473

# AMSTATNEWS

The Membership Magazine of the American Statistical Association • <http://magazine.amstat.org>



## 2015 Salary Survey of Business, Industry, and Government Statisticians

### **ALSO:**

International Prize  
in Statistics Awarded  
to Sir David Cox for  
Survival Analysis Model

The Fulbright Scholar  
Program, STEM,  
and Scholars



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NOVEMBER 2016 • ISSUE #473

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

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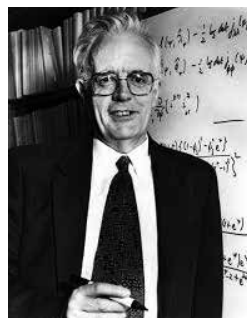
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American Statistical Association



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

## features

- 3 President's Corner
- 6 International Prize in Statistics Awarded to Sir David Cox for Survival Analysis Model
- 7 Funding Opportunity: NSF Launches Multidisciplinary Data Science Program for Collaborative Institutes
- 8 ASA's Public Education Campaign Showcases the Significance of Statistics to Students
- 9 ASA Leaders Reminisce: David Morganstein
- 12 Member Spotlight: Bo Zhang
- 13 JQAS Highlights: Traveling Umpire, Tennis, and Soccer Featured in September Issue
- 14 Department Chairs Gather at ASA to Discuss Pressing Education Issues
- 16 The Fulbright Scholar Program, STEM, and Scholars
- 24 2015 Salary Survey of Business, Industry, and Government Statisticians
- 28 Review of Soft Skills Training Available
- 29 ASA Interest Groups: Interested?



Sir David Cox of Oxford, England, is the winner of the 2016 International Prize in Statistics. See Page 6

## columns

### 31 MASTER'S NOTEBOOK The World of Biostatistics Is a 'Wild West': Take Advantage

This column is written for statisticians with master's degrees and highlights areas of employment that will benefit statisticians at the master's level. Comments and suggestions should be sent to Megan Murphy, *Amstat News* managing editor, at [megan@amstat.org](mailto:megan@amstat.org).



## Online Articles

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



**STATtr@k** | "Statisticians are fortunate that we could combine our scientific interests with the ability to make a positive difference in the world," wrote John Bailar in 1990. Sadly, John passed away last month. In his memory, we are republishing his essay, "**Pondering the Why of a Statistics Career**" on STATtr@k. We hope it inspires you as you ponder why you chose to be a statistician.

### Social Chatter

In July, we asked our followers on Facebook and Twitter what animal a mascot for statisticians would be. Here are two answers, and be sure to check out **Page 48** for more:



**Becky McNeil** • @BiosiatBecky

How about a crow? Highly intelligent, social, creative, playful, and fun to watch them dance



**Susie Chen** Butterfly! Statisticians have to work well w/all parties w/integrity & principles!! We are darn popular & much needed by all.



## departments

### 33 education

MWM Makes a Difference for Small-Town Teachers

### 34 meetings

Join Us for the 6th Annual Conference on Statistical Practice in Jacksonville, Florida



Page 34

## member news

### 35 People News

### 36 Awards & Deadlines

### 38 Section • Chapter • Committee News

### 40 Professional Opportunities



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# For the Thanksgiving Season, Thank Someone with an Award Nomination

John F. Kennedy once said, “We must find time to stop and thank the people who make a difference in our lives.” The Thanksgiving holidays, in mid-October in Canada and in late November in the United States, make this the ideal season to reflect on and thank the people who have supported us in our careers and lives. And it also happens to be the season to make nominations for awards given by the ASA, COPSS (Committee of Presidents of Statistical Societies), and other professional organizations. Therefore, I am devoting this month’s column to encouraging *you* to take the time to thank someone who has been influential in your life by nominating them for an award!

I have served on many award committees and am often disheartened by how so few people take the time to nominate others. Most of the awards given by the ASA and COPSS require a CV, nomination letter, and possibly a few additional letters of support, which means nominating someone is not an onerous task. So, in the spirit of Thanksgiving, think of a professional colleague, mentor, mentee, or friend who is important to you and take the time to nominate them.

## Finding an Appropriate Award

The awards given by the ASA and COPSS vary. Some come with the “honor” of giving an invited lecture at the Joint Statistical Meetings (JSM), so it’s best to find out if your potential nominee is comfortable with that requirement before you make the nomination. Some include a cash honorarium for the winner, ranging from a few hundred dollars to several thousand dollars, while others do not include a monetary award. Some are awarded for a specific paper or accomplishment, or for work in a specific area of statistics, while others are more general. A few have restrictions based on age and/or years since degree, gender, membership in the ASA or a specific section, or being enrolled in a particular type of degree program.

Details are provided on the various award websites, but in the interest of encouraging and facilitating nominations, I have provided information here that should help you decide which award(s) to pursue for the person (or people) you have chosen to honor with a nomination.

Most of the awards here are presented by the ASA, but a few are given by COPSS and supported by the five COPSS societies: the ASA; Institute of Mathematical Statistics; Statistical Society of

Canada; and Eastern and Western North American Regions of the International Biometric Society.

Three of the five COPSS awards are given in alternating years, while the Fisher Lecture and Award and the Presidents’ Award are given annually. The Elizabeth L. Scott Award is not being given in 2017 and thus is not described in this article.

I have tried to classify the awards in a way that makes it easiest to find an appropriate award based on the skills, interests, and accomplishments of your nominee. Except for the student awards and scholarships presented at the end, the categorizations proceed (loosely) from the most specific to the most general criteria.

## Awards for Specific Areas of Statistics

The *Monroe G. Sirken Award in Interdisciplinary Survey Methods Research* recognizes contributions to theory and methods of interdisciplinary survey research. The honoree gives the Sirken Lecture at JSM and receives a \$5,000 honorarium, plaque, and reimbursed travel expenses. Nominations require a nominating letter, three supporting letters, and a CV. Deadline is December 15.

There are two *Gottfried E. Noether Awards*, the *Senior Scholar* and *Young Scholar*. Both are given for accomplishments in nonparametric statistics. Both honorees are invited to deliver a lecture at JSM, and each is awarded an honorarium. Nominations include a nominating letter, three supporting letters, and a CV. Deadline is December 15.

The COPSS *George W. Snedecor Award* honors an individual who was instrumental in the development of statistical theory in biometry. The award is for a noteworthy publication in biometry within three years of the date of the award and is given in odd-numbered years. See <http://bit.ly/2enpTWU> for details about making a nomination. Deadline is January 15.

The *W.J. Dixon Award for Excellence in Statistical Consulting* is given for demonstrated excellence in statistical consulting or for new methods, software, or ways of thinking that improve statistical practice in general. The award includes a \$500 honorarium and a certificate. Nominations include a nominating letter and CV. Deadline is February 1.

The *W.J. Youden Award in Interlaboratory Testing* recognizes authors of publications that make outstanding contributions to the design and/or analysis of interlaboratory tests or describe ingenious approaches to the planning and evaluation of data



Jessica Utts

**MORE ONLINE**  
For more information about ASA awards, visit <http://bit.ly/2evVO6K>.

#### IN OCTOBER'S AMSTAT NEWS

A list of award  
deadlines  
and contact  
information:  
[http://bit.  
ly/2ex76cg](http://bit.ly/2ex76cg).

A description of  
the 2016 COPSS  
award winners:  
[http://bit.  
ly/2e45jfr](http://bit.ly/2e45jfr)

from such tests. The publication must have appeared or been accepted for publication in English-language, professionally refereed journals or monograph series during the given year or the two preceding years. The award includes a \$1,000 honorarium. A nomination letter and copy of the relevant publication are required. Deadline is February 15.

#### Awards for Education, Mentoring, and Service

There are two Waller Awards for excellence and innovation in statistical education. Those eligible for the *Waller Education Award* are early in their career (10 or fewer years of full-time teaching), including graduate teaching assistants, and have full responsibility for teaching an introductory statistics course. Those eligible for the *Waller Distinguished Teaching Career Award* have 20 or more years of statistics teaching experience and have had an effect on statistics education beyond the awardee's home institution. Nominations include a nominating letter of at most four pages, up to four supporting letters (at most two pages each), and a CV. Deadline is February 15.

The *Causality in Statistics Education Award* is given to a person or team that enhances the teaching and learning of causal inference and includes a \$5,000 honorarium. Nominations include a cover letter that provides information about the nominee, type of material suggested as an important contribution, the intended audience, and an abstract of why the material is nominated, along with the nominated work. Deadline is February 15.

The *ASA Mentoring Award* honors ASA members who are recognized for having sustained efforts supporting the work and developing the careers of statisticians. A nominating letter outlining why the nominee deserves the award is required and supporting letters are welcome. Deadline is March 1.

The *ASA Founders Award* recognizes ASA members who have provided extended and varied distinguished leadership service to the ASA. The Founders Award is the only one for which the winners are not notified in advance of the award presentation at JSM. Nominations should include a list of individuals who can be contacted to provide information about the nominee's credentials for the award. Deadline is March 15.

#### Awards for a Specific Paper or Collaboration, But Not Limited to a Specific Topic

The *Outstanding Statistical Application Award* recognizes the authors of papers that demonstrate an outstanding application of statistics in any substantive field. Eligible work includes papers, monographs, reports, and other evidence appearing no more than two years prior to the presentation of the award. The work must have been subject to external peer review

and, preferably, formal refereeing. An honorarium of \$1,000 is split among the authors. Nominations include the nominated paper and a letter describing its significance and effect on the substantive field. Deadline is March 1.

The *Statistics in Physical Engineering Sciences (SPES) Award* is given for innovative use of statistics to solve a high-impact problem in the physical and engineering sciences. In odd-numbered years (such as 2017), the award is presented for a paper published in a refereed statistics, physics, chemistry, or engineering journal during the previous two years. In even-numbered years, the award is presented for distinguished work performed during the previous two years by a collaborative team of statisticians and practitioners in an industrial, manufacturing, or research organization. At least one of the awardees must be a member of the ASA and the Section on Physical and Engineering Sciences when nominated. Nominations include a letter and a copy of the publication. Deadline is February 20.

The *Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Award*, sponsored by the ASA SPAIG Committee, recognizes collaborations between at least two of the three sectors. There is a specific nomination form for this award, which can be downloaded from [http://bit.  
ly/2dq6GXD](http://bit.ly/2dq6GXD). Deadline is March 1.

The *Excellence in Statistical Reporting Award* is presented to a member of the media for either a single piece on or sustained contributions to the science of statistics and its role in public life. There is a specific nomination form for this award, which can be downloaded from <http://bit.ly/2eb6Wvh>. Deadline is March 1.

#### Memorial Awards in Honor of a Distinguished Statistician

The *Deming Lecturer Award* honors an individual who has either made significant contributions in fields related to those in which W. Edwards Deming devoted his career or has made significant contributions through effective promotion of statistics and statistical thinking in business and industry. As suggested by the title, the awardee presents an invited lecture at JSM and receives a \$1,000 honorarium and reimbursed travel expenses. Nominations consist of a specific nomination form, a nomination letter, and names of two additional references. Deadline is November 15.

The *COPSS Fisher Award and Lecture* honors both the contributions of Sir Ronald Aylmer Fisher and the work of a present-day statistician for their advancement of statistical theory and applications. The recipient presents the Fisher Lecture at JSM and receives a cash award. Nominations include a nominating letter, three supporting letters, and a CV. Deadline is December 15.

The *Florence Nightingale David Award*, sponsored jointly by COPSS and the Caucus for Women in Statistics, is granted in odd-numbered years to a female statistician who serves as a role model to other women by her contributions to the profession through excellence in research, leadership of multidisciplinary collaborative groups, statistics education, or service to the professional societies. Nominations include a letter, three to five supporting letters, and a CV. Deadline is January 15.

The *Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society* is awarded for substantial contributions to the statistical profession that have led in direct ways to improving the human condition. Nominations include a letter, at least two additional letters of support, and a CV. Deadline is February 1.

The *Harry V. Roberts Statistical Advocate of the Year Award* was initiated by the Chicago Chapter and awards an individual (not necessarily a statistician) who has inspired respect for data and the effective use of statistical reasoning in areas where such respect and use were lacking. The recipient receives a \$500 honorarium and reimbursed travel expenses to give a presentation at a meeting of the Chicago Chapter. Nominations include a letter and CV. Deadline is February 15.

The *Samuel S. Wilks Memorial Award* is given to an individual who has made statistical contributions to the advancement of scientific or technical knowledge, ingenious application of existing knowledge, or successful activity in the fostering of cooperative scientific efforts that have been directly involved in matters of national defense or public interest. A cash award is given. Nominations consist of a nominating letter and CV. Deadline is February 15.

## General Awards

The *COPSS Presidents' Award* is given annually to a young member of the statistical community in recognition of outstanding contributions to the profession of statistics. It is awarded for a single contribution of extraordinary merit or an outstanding aggregate of contributions. The recipient must be under age 41 throughout the award calendar year, or under age 46 throughout the award calendar year if they received a terminal statistically related degree no more than 12 years prior to that year. Nominations consist of a nominating letter that includes the nominee's date of birth, up to five additional letters of support, and a CV. Deadline is January 15.

*ASA Fellows* must have an established reputation and have made outstanding contributions to statistical science, with broadly defined areas that qualify as important contributions. Nominees must have held continuous membership in the ASA for

the three years ending on February 28, 2017. There is an online nomination form that must be used, and up to four letters of support can be included. No individual can participate in more than two nominations in a given year (as nominator or letter writer) so it is important to start early to get commitments from letter writers before they commit to other nominations. Deadline is March 1.

## Awards and Scholarships for Students

More than half the ASA sections sponsor a student paper competition. Students may submit papers to no more than two sections and accept only one section's award. Visit <http://bit.ly/2erJ16I> to learn more about requirements for individual sections. In most cases, the deadline is December 15, but a few are earlier.

The *Gertrude M. Cox Scholarship* is cosponsored by the ASA and Caucus for Women in Statistics. Two \$1,000 scholarships are presented each year, one to a woman near the start of her graduate career and one to a more advanced female graduate student. Only citizens or permanent residents of the United States or Canada are eligible. There is a self-nomination form available at <http://bit.ly/2dCOd93>, and three letters of recommendation must be included with the application. Deadline is February 23.

The *Edward C. Bryant Scholarship for an Outstanding Graduate Student in Survey Statistics* is a \$2,500 scholarship presented to a student with the potential to contribute to survey statistics. There is a self-nomination form available at <http://bit.ly/2dso3SY>, and three letters of recommendation must be included with the application. Deadline is March 1.

The *Government Statistics Section Wray Jackson Smith Scholarship Award* is awarded jointly with the ASA's Social Statistics Section. It supports work toward a career in government statistics. The scholarship encourages promising young statisticians to consider a future in government statistics by providing up to \$1,000 for use in exploring any of a broad number of opportunities. There is a self-nomination form available at <http://bit.ly/2ek0zUy>, and two letters of recommendation must be included with the application. Deadline is April 1.

There are also three awards for students or recent graduates to travel to the *Conference on Statistical Practice*, held in February. They are the John J. Bartko Scholarship Award, Lingzi Lu Memorial Award, and Lester R. Curtin Award. However, the deadline for these awards is October 15, and thus they are not described here. Details can be found at <http://bit.ly/2eUODti>.





# International Prize in Statistics Awarded to Sir David Cox for Survival Analysis Model

## *Cox Model Applied in Science, Engineering, and Medicine*

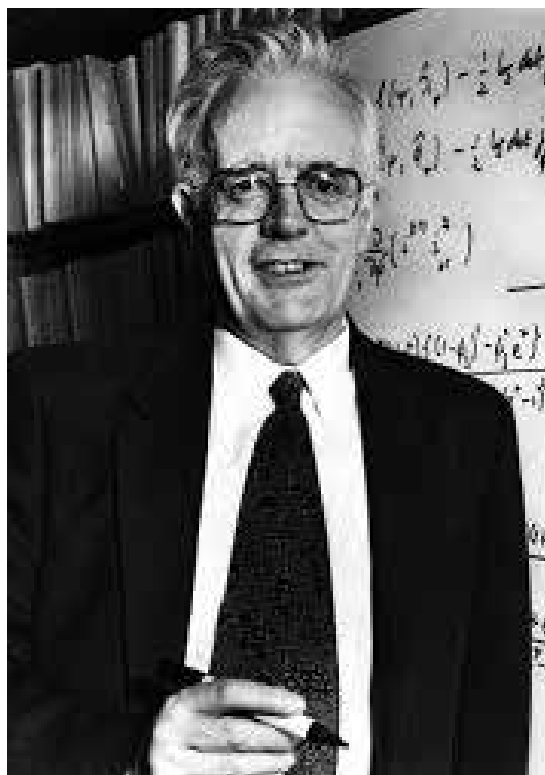
Prominent British statistician Sir David Cox has been named the inaugural recipient of the International Prize in Statistics. Like the acclaimed Fields Medal, Abel Prize, Turing Award and Nobel Prize, the International Prize in Statistics is considered the highest honor in its field. It will be bestowed every other year to an individual or team for major achievements using statistics to advance science, technology and human welfare.

Cox is a giant in the field of statistics, but the International Prize in Statistics Foundation is recognizing him specifically for his 1972 paper in which he developed the proportional hazards model that today bears his name. The Cox Model is widely used in the analysis of survival data and enables researchers to more easily identify the risks of specific factors for mortality or other survival outcomes among groups of patients with disparate characteristics. From disease risk assessment and treatment evaluation to product liability, school dropout, reincarceration and AIDS surveillance systems, the Cox Model has been applied essentially in all fields of science, as well as in engineering.

“Professor Cox changed how we analyze and understand the effect of natural or human-induced risk factors on survival outcomes, paving the way for powerful scientific inquiry and discoveries that have impacted human health worldwide,” said Susan Ellenberg, chair of the International Prize in Statistics Foundation. “Use of the ‘Cox Model’ in the physical, medical, life, earth, social and other sciences, as well as engineering fields, has yielded more robust and detailed information that has helped researchers and policymakers address some of society’s most pressing challenges.”

Successful application of the Cox Model has led to life-changing breakthroughs with far-reaching societal effects, some of which include the following:

- Demonstrating that a major reduction in smoking-related cardiac deaths could be seen within just one year of smoking cessation, not 10 or more years as previously thought



Sir David Cox of Oxford, England, is the winner of the 2016 International Prize in Statistics.

- Showing the mortality effects of particulate air pollution, a finding that has changed both industrial practices and air quality regulations worldwide
- Identifying risk factors of coronary artery disease and analyzing treatments for lung cancer, cystic fibrosis, obesity, sleep apnea and septic shock

His mark on research is so great that his 1972 paper is one of the three most-cited papers in statistics and ranked 16th in *Nature's* list of the top 100 most-cited papers of all time for all fields.

In 2010, Cox received the Copley Medal, the Royal Society’s highest award that has also been bestowed upon such other world-renowned scientists as Peter Higgs, Stephen Hawking, Albert Einstein, Francis Crick and Ronald Fisher. Knighted in 1985, Cox is a fellow of the Royal



Society, an honorary fellow of the British Academy and a foreign associate of the U.S. National Academy of Sciences. He has served as president of the Bernoulli Society, Royal Statistical Society and International Statistical Institute.

Cox's 50-year career included technical and research positions in the private and nonprofit sectors, as well as numerous academic appointments as professor or department chair at Birkbeck College, Imperial College of London, Nuffield College and Oxford University. He earned his PhD from the University of Leeds in 1949, after first studying mathematics at St. Johns College. Though he retired in 1994, Cox remains active in the profession in Oxford, England.

Cox considers himself to be a scientist who happens to specialize in the use of statistics, which is defined as the science of learning from data. A foundation of scientific inquiry, statistics is a critical component in the development of public policy and has played fundamental roles in vast areas of human development and scientific exploration. ■

## About the International Prize in Statistics

The International Prize in Statistics recognizes a major achievement of an individual or team in the field of statistics and promotes understanding of the growing importance and diverse ways statistics, data analysis, probability and the understanding of uncertainty advance society, science, technology and human welfare. With a monetary award of \$75,000, it is given every other year by the International Prize in Statistics Foundation, which is comprised of representatives from the American Statistical Association, International Biometric Society, Institute of Mathematical Statistics, International Statistical Institute and Royal Statistical Society. Recipients are chosen from a selection committee comprised of world-renowned academicians and researchers and officially presented with the award at the World Statistics Congress.



## FUNDING OPPORTUNITY

### NSF Launches Multidisciplinary Data Science Program for Collaborative Institutes

**N**SF announced Transdisciplinary Research in Principles of Data Science (TRIPODS), a new crosscutting solicitation, in late September. Sponsored by both the Mathematical and Physical Science (MPS) and the Computer and Information Science and Engineering (CISE) directorates, TRIPODS, according to the solicitation, “aims to bring together the statistics, mathematics, and theoretical computer science communities to develop the theoretical foundations of data science through integrated research and training activities.” The program is part of Harnessing Data for 21st Century Science and Engineering, one of the 10 big ideas for future NSF investments announced this past spring (see <http://bit.ly/2ex2ItR>).

The solicitation was informed by an April 2016 workshop, “Theoretical Foundations of Data Science,” attended by 43 people. The statisticians among them included Amy Braverman, David Donoho, David Dunson, Xiaming Huo, and Bin Yu. The workshop report is available

at <http://bit.ly/2eoIWRl>). A key conclusion of the report is that “theoretical foundations are necessary in all aspects of data science, from the generation and collection of data to the analysis and decision making processes.”

The program will have two phases. Phase I will support the development of small collaborative institutes that have significant and integral participation of the statistics, mathematics, and theoretical computer science communities. Phase II, to be announced at a later date (pending funding), will “support a smaller number of larger institutes selected from the Phase I institutes via a second competitive proposal process.”

The total anticipated funding amount is \$12 million, with eight to 10 awards expected to be given. The awards would be funded for up to \$500,000 per year for a duration of three years.

Letters of intent are due January 19, 2017. The proposal submission window is March 1–15. Statistics Program Director Nandini Kannan is one of five TRIPODS contacts. Learn more at <http://bit.ly/2emIGGj>.

# ASA's Public Education Campaign Showcases the Significance of Statistics to Students

Jill Talley, ASA Public Relations Manager

From sports to elections, diversity, career guidance videos, workforce surveys, ASA's public education campaign, *ThisIsStatistics*, has engaged students and teachers in dynamic new ways, all to showcase the value of statistics on society.

Aside from hands-on learning in the classroom, one of the most powerful ways students get excited about educational and career opportunities in statistics is by hearing directly from professionals in the field. We continue to produce a series of videos showcasing statisticians and data scientists who have made careers collecting and analyzing data on an impressive array of social and economic issues for high-profile companies, government agencies, academia and global non-profit organizations. The latest in this series, titled "Statisticians Making a Difference," will debut later this month and features Erik Andrejko of Climate Corporate, Valerie Bradley of BlueLabs, Samantha Lee-Ming Chiu of Booz Allen Hamilton, Jake Porway of DataKind, Megan Price of the Human Rights Data Analysis Group, and Marlyn Rodriguez of the U.S. Bureau of Economic Analysis.

Last spring, news blog entries chronicling diverse opportunities in the field of statistics as well as Facebook and Google advertisements featuring Florence Nightingale's groundbreaking strides in a male-dominated field were also popular and successful at drawing in younger audiences to the site.

While political conventions, campaigns and advertisements were ramping up this summer, we launched Prediction 2016, an election prediction contest for students to use statistics to predict who will be the next president of the U.S. Interest has poured in from students and teachers all over the world, excited about this unique opportunity to showcase their statistical savviness, as well as media outlets like r-bloggers and the New York Times Learning Network, eager to promote the unique educational activity.

In September, more than 100 high-school and undergraduate students from across the United States learned first-hand what it's like to master statistics off the field and in the front office during our Sports Analytics Webinar. Dennis Lock, director of analytics with the Miami Dolphins; Stephanie Kovalchik, senior sport scientist with Tennis Australia; and Scott Evans, senior research scientist at Harvard University and member of the New England Symposium on Statistics in Sports, shared their professional experiences on what statistics is and isn't, why they enjoy their jobs and how it's becoming one of the hottest careers. A recording is available online.

This fall, we partnered with the Society for Human Resource Management (SHRM) to conduct surveys quantifying the presence, demand, and utilization of statisticians and data scientists in the workforce and the significance and levels of college degrees in these fields. Results will be published soon.

Through these efforts, and utilizing social media platforms, we've been able to connect with students like never before.

In August, more than 6,800 web visitors checked out Prediction 2016, and in

September, more than 8,000 people visited the *ThisIsStatistics* website. Around that same time, we generated more than 80,000 impressions on twitter. Conveying the importance of statistical literacy and understanding, however, cannot be accomplished online alone. So, we met with dozens of school counselors at this year's annual conference of the American School Counselor Association, helping them understand and relate the value of statistics to students in both an educational curriculum and their daily lives.

If you haven't visited *ThisIsStatistics.org* recently, take a look at how these and other resources are helping to expand awareness of statistics, and stay tuned as we will continue to educate students, teachers, parents and others about this expanding field. ■



# David Morganstein

Jim Cochran

*In the 21st installment of the Amstat News series of interviews with ASA presidents and executive directors, we feature a discussion with 2015 ASA President David Morganstein.*

**Q**In a December 2014 interview with Brigid Schulte of *The Washington Post*, you commented on reasons why statistics has been more successful than other Big Data STEM fields in attracting women. The ASA has actively worked through initiatives such as the This Is Statistics campaign to make middle- and high-school girls and minorities more aware of the opportunities a statistics career can offer. How effective do you think these efforts have been, and what other efforts can the ASA undertake to attract the best and brightest young people to our discipline?

**A**The ASA is off to a good start, Jim. Taking the step of committing to do this was an important beginning! We won't have a real measure of success for a while, not until we see if the number of young people—especially young women—taking AP Statistics in high school or taking undergrad programs in statistics increases.

In Jessica Utts' president's address, she noted that some 200,000 high-school students took the AP Statistics exam. The ASA is increasing outreach to parents, students, teachers, and high-school counselors to encourage many of these kids to take statistics classes when they enter college or complete a statistics undergrad degree as their next educational step.

As you may recall, I talked with nine women who are very active in the ASA, asking them why they took up statistics as a career, in my August 2015 President's Corner column. A common theme expressed by most was that women enjoyed collaborative work, wanted to make a positive impact on society, and wanted a career that could improve the lives of others. This is what we do!

**Q**During your address at the 2015 Joint Statistical Meetings, you announced that the ASA would institute an annual mentoring award to be presented to a member who demonstrates extraordinary leadership in developing the careers of statistics students, statisticians, and statistical researchers. How are these efforts proceeding?

**A**I am both proud and pleased that these activities continue. Several chapters and sections initiated

**David Morganstein** is a vice president at Westat, Inc., where he has worked since 1976. He is the director of Westat's statistical staff of 70 MS and PhD statisticians and survey methodologists. A senior statistician with more than 40 years of experience, his areas of expertise include the design and application of sample surveys and systems of evaluation, quality control, statistical analysis, and estimation and quantification.



David Morganstein

Morganstein is a fellow of the American Statistical Association and was ASA president in 2015. Previously, he served on the ASA's Board of Directors as treasurer and vice president. He is a recipient of the ASA's Founders Award and an elected member of the International Statistics Institute (ISI). He chaired the ISI's Ethics Committee when it revised the ISI Declaration on Professional Ethics and has served on the ISI Ethics Advisory Board.

Since its inception, Morganstein has instructed in the Joint Program in Survey Methodology, sponsored by the University of Maryland, and is currently a special faculty. He also serves on George Mason University's Statistics Department Advisory Board. He has made numerous presentations on statistical issues and published papers in journals including *Statistics and Public Policy*, *Journal of Official Statistics*, *Statistical Journal of the IAOS*, *Statistics in Medicine*, *Journal of the American Medical Association*, and the *Proceedings of the Joint Statistical Meetings*.

Morganstein holds a BSEE in electrical engineering from Purdue University and an MA in statistics from the University of Michigan.

mentoring programs in the past few years. We had another round of creating mentor/mentee pairs this year at both the Conference on Statistical Practice and the Joint Statistical Meetings. Importantly, we bestowed the first annual Outstanding Mentor Award at the Sunday night awards event.

The Awards Committee had some extraordinary nominees, and all the committee members felt a bit of awe at the task of making a choice. The stories told by the mentees were touching.





Former ASA presidents David Morganstein and Sally Morton attend CSP 2016.

There were so many superb nominees that the committee had to make two selections for this inaugural award: Doug Zahn and Fritz Scheuren.

**You are a member of the advisory board for the George Mason University Statistics Department. What are your responsibilities in this role, and what have you learned about statistics education through this role?**

**A** Department Chair Bill Rosenberger assembled an advisory group from government and industry to provide feedback on GMU's statistics program. Housed in the GMU Engineering School, the department serves a diverse and changing population in the Washington, DC, area. Bill seeks ideas for new directions and uses the group as a sounding board for important decisions he and the department face.

It's probably fair to say that many statistics departments are in a struggle for support and funding from their college leadership. Not all deans, provosts, and other university leadership appreciate what our profession has to offer and how important a strong statistics department can be in attracting talented students and in giving them the tools they need to succeed when they graduate. With the reported need for workers specializing in data analysis in the next few years, departments like GMU's are trying to recruit and train the next generation of statisticians.

**While serving as ASA president, you visited a number of chapters and universities. What message did you hear during those visits?**

**A** First, and very importantly, I saw firsthand the hard work of hundreds of volunteers in the chapters I visited. They were exceptional hosts and left me feeling like visiting dignitary! One clear and

frequent message from them was, "How can I help?" The challenge for the ASA is finding ways to harness the energy and enthusiasm that's out there.

Universities were always a great treat to visit. Talking with young, eager students is so uplifting! Sitting in a room with a few dozen and having them put challenging questions to me was both tough and fun. The ASA is seeing an increasing interest in forming student chapters, and a number are well underway. We have to think about how we can best support them while not getting in their way. A common request I heard from many students who were working in a new culture and a non-native language was for the ASA to help them improve their communication skills.

**You are chairing Barry Nussbaum's initiative to collaborate with the ICSA, KISS, and IISA. What is that collaboration about, and what do you hope will come out of that effort?**

**A** We had our first meeting at JSM, and we've started email connections to discuss this, Jim. One objective is to help students make that transition to their first job wherever it may be. Related to that is the theme I mentioned about helping some improve communications skills. We started to discuss the topic of cultural differences. Are there things we should consider about the standards and norms that many from these associations are familiar with and whether they differ in a new and different culture? If so, can our associations provide training and seminars or publish articles with guidance that can help them identify and move beyond those differences? Another topic was finding ways of connecting their members to opportunities to get involved in ASA chapters and sections. I think there is a lot we can do to help with these issues!



David Morganstein stands with students who attended a talk he gave to the Boston chapter of the ASA in 2015.

**Q One of your initiatives made the connection with Stats.org. How has that effort evolved, and what might we see in the future?**

**A** Stats.org has come a long way since the ASA announced its partnership with Sense About Science USA. The website hits have grown to more than a million page views, according to Trevor Butterworth, editor of Stats.org. The website attracts many journalists. The number of case studies on the use and misuse of statistics in the news, public policies, and scientific research is growing. A couple of examples:

**Christine Madsen** talks about the importance of communication and mentorship in graduate student training, two themes of great importance to me.

**Scott Harris** argues that Founding Father George Washington was an early data scientist, because of his appreciation for gathering and using data that aided him throughout his life.

Stats.org and the ASA offer public engagement workshops for scientists and statistics workshops for journalists. Three of the former and five of the latter were held just this year alone. A public engagement workshop was held during the Women in Statistics and Data Science Conference in October. An advisory board offers free statistical help to journalists. In the 2016 Stats.org prospectus, ASA Executive Director Ron Wasserstein said, “The ASA-SAS USA partnership ... has set its sights squarely on the target of developing a statistical literate citizenry, and is

quite likely the most important development in the American Statistical Association’s long efforts to promote statistical literacy.”

**Q What are the big challenges facing the ASA and our profession?**

**A** One challenge is to stay involved in Big Data activity and the important use of statistics it makes possible. The ASA has done a number of things to connect with other professions, such as IT, that are also involved to tie this journey together.

Another truly difficult challenge is to make the point that good design and reliable data are needed to make sound decisions. We need to do this at a time when increasing numbers of people are viewing data as something one uses to prove a point and that often are cherry picked or not to be trusted. There’s a quip about using data the way a drunk uses a lamp post, more for support than illumination. We need to make a convincing argument that members of our profession can be trusted to summarize what our good designs and the reliable data we collect say, objectively and without bias.

Last, we need to expand our offerings for professional skills that help us all improve our ability to communicate and give us tools to lead. Our perspective is needed as much now as it ever has been. Our objectivity and appreciation for the assumptions and limitations of research are invaluable. We can work with and help journalists report events in an impartial and accurate way. *This Is Statistics!* This is what we do. ■

# Member Spotlight: Bo Zhang

## What or who inspired you to be a statistician/data scientist?

As I entered high school, I tried out for my school soccer team, but did not earn a spot for the first season. Instead, the coach asked me to collect data during the games (e.g., goals, saves, misses, assists, etc.) and calculate simple summary statistics. Then, I started to realize I was passionate about data and statistics. Such passion continued to motivate me during my bachelor's and master's degree studies in mathematics. Not content with the mere accumulation of theoretical knowledge, I proactively pursued practical opportunities (e.g., the Mathematical Contest in Modeling) to solve real-world problems using data and mathematics. But that still wasn't enough. I wanted to gain more advanced knowledge and learn analytical methods to make sense of real-world data every day. This led me to spend 3.5 more years pursuing master's and PhD degrees in statistics at North Carolina State University.

## Do you prefer statistician, data scientist, or either?

I do prefer to call myself a data scientist today because my work is not only designing and implementing statistical models (e.g., regression, classification, clustering, association, recommender systems) as statisticians do, but also writing codes to deploy these models to create real-time actionable insights and presenting my findings on where and how these insights can help the business users to drive and grow businesses. From concept to realization, data scientist is the role where you can go from A to Z, or at least D to S (from Data to Science).

## You married a statistician. How did you meet?

It was the fall of 2009 and I was entering my first year as a PhD student in statistics at North Carolina State University and working as a teaching assistant for Introduction to Probability and Distribution Theory. I was one of the two TAs for this course. The other one was my PhD classmate and now my wife—Liwei Wang. She was beautiful and smart. As we were assisting the same course, we quickly became good friends and discussed statistics problems together. The topics of our discussions then ranged much beyond statistics. The rest is history. Now she is a statistician in the pharmaceutical industry leading statistics and programming teams on clinical trials. I'm so glad I got assigned to that particular course.

## Name a few specific skills you need to do your job.

In addition to possessing solid quantitative skills in mathematics and statistics, knowledge of SQL and Hadoop to access data, and basic programming



Bo Zhang met his wife Liwei Wang in graduate school. Both are statisticians.

abilities in R or Python, data scientists also need to be able to understand the business and requirements from business users and translate quantified insights to cross-functional teams on development, design, marketing, and sales to deliver the actionable recommendations. Besides these technical hard skills, the soft skills like curiosity, creativity, grit, and humility can help data scientists overcome barriers to dig out the golden nuggets from mountains of Big Data.

## What is the most exciting part of your job?

Mathematics and statistics are only meaningful and fun when they are solving real-world problems. The opportunity to leverage them along with Big Data to help drive and grow businesses by creating actionable insights has always been the most exciting part of my job.

## Have you ever had a mentor? If so, what role did mentoring play in your career?

Yes. When I was a PhD student at NCSU, my doctoral dissertation co-advisers—Hua Zhou (now at UCLA) and Lexin Li (now at UC Berkeley)—helped me build my self-confidence and create plans that moved me forward. They provided me opportunities such as the SAMSI graduate fellowship and industry conference travel fund. They maintained high standards to excellence and gave direct, constructive, and honest feedback.

I was also fortunate to meet with Sujit Ghosh (who was then one of the directors of graduate program in statistics at NCSU), whom I consider my career mentor. He teaches by sharing his experiences, challenges, and successes. When I had the opportunities to intern with local companies

**Bo Zhang** is a senior data scientist at IBM. His mission is to design and implement statistical models and machine learning algorithms on Big Data, write codes to deploy these models to create real-time actionable insights, and present where and how these insights can help business users drive and grow businesses.



during my PhD studies, he helped me decide among offers of graduate industrial traineeships and explore my future career options. I still regularly meet with him to discuss the way to bridge the gap between the statistics in academia and the data science in industry.

### Have you ever mentored anyone? If so, what did you learn?

As a lead data scientist, I proactively coached junior data scientists and developers interested in data science. I helped them in their data preparation skills and statistical model design skills. Actually, there is value for both them and me. While assisting them to achieve their goals, I enhanced leadership skills and learned new perspectives (e.g., developers' perspectives).

### What advice would you give to young statisticians just beginning their careers?

Get your hands on real-world data (e.g., Kaggle projects). Spend and invest more time in programming (e.g., R, Python, etc.). Practice presenting your statistical findings to nonstatistical audiences. Keep up to date with the application of statistics in your domain. And, of course, take advantage of mentoring resources as much as possible.

### Why did you join the ASA, and why have you stayed a member?

When I first joined the ASA as a PhD student in statistics at North Carolina State University, I took advantage of attending conferences like JSM to present my research and learn from others. Even though I work in industry, I still get connected to the network of statistical professors, statisticians, and data scientists through the ASA. In fact, I'm scheduled to present an accepted paper at the DSAA (Data Science and Advanced Analytics) conference, which the ASA cosponsors with IEEE and ACM.

### What do you enjoy doing in your spare time?

In my spare time, I enjoy playing soccer and writing codes to analyze data (not just soccer data) to amuse myself.

### Name one or two favorite blogs or books you have read and would recommend to others.

One of my favorite books is *The Elements of Statistical Learning* by Hastie, Tibshirani, and Friedman. It helps statisticians not only understand the machine learning algorithms from the computer scientists' perspective, but also learn the mathematical rigor behind these machine learning algorithms. I consider this book to be the go-to bible for data scientists. ■

## JQAS HIGHLIGHTS

# Traveling Umpire, Tennis, and Soccer Featured in September Issue

Mark E. Glickman, JQAS Editor-in-Chief

The September 2016 issue (volume 12, issue 3) of the *Journal of Quantitative Analysis in Sports (JQAS)* consists of three articles with applications to soccer, tennis, and tournament scheduling. The first two articles described here represent work presented at the 2015 MathSport International conference in Loughborough, UK.

"Searching for the GOAT of Tennis Win Prediction" by **Stephanie Kovalchik** is the Editor's Choice article for this issue and available for free download for a year. The article describes 11 forecasting models used for predicting professional tennis matches and compares their predictive performance. The approaches considered—which were categorized as regression-based, point-based, and paired comparison models—developed models based on rolling 52 weeks of data and applied to forecast games immediately after the 52-week window. The comparison of these methods was applied to professional tennis matches played in 2014, with prediction accuracy achieving 70% by the best of the approaches examined.

"A Combined Approximation for the Traveling Tournament Problem and the Traveling Umpire Problem" by **Marco Bender** and **Stephan Westphal** considers the task of designing a double round-robin tournament schedule in which no two teams compete against each other in consecutive rounds, minimizing the total travel distance by the umpires who must referee at least one game at every team's home venue. The problem addressed in this article essentially combines the traveling tournament problem and the traveling umpire problem into one overall optimization problem. The authors develop an approximation algorithm to address the problem and provide assurances of its near-optimality.

Finally, "Analysis of Substitution Times in Soccer" by **Rajitha Silva** and **Tim Swartz** study the problem of determining optimal substitution times in soccer games. The paper was inspired by a 2012 *JQAS* paper by **Bret Myers** that proposed a particular substitution time algorithm. The authors review the paper by Myers, provide a critique of the results, and offer a different perspective of substitution time guidelines based on an analysis through Bayesian logistic regression modeling. The manuscript is accompanied by a comment provided by Myers and a rejoinder by Silva and Swartz.

These articles are available to all members of the Section on Statistics in Sports and to everyone else on a subscription basis from the *JQAS* website at <http://bit.ly/2eamNrC>. Prospective authors also can find the journal's aims and scope, as well as manuscript submission instructions, on the website.

# Department Chairs Gather at ASA to Discuss Pressing Education Issues

With support from a National Science Foundation (NSF) award, the ASA hosted a chairs workshop at its headquarters in July. Attended by more than 40 department chairs from more than 25 states, the workshop featured themes on workforce demands and needs, data science education and research, mentoring and junior faculty, and federal funding.

Intended to complement the annual half-day workshop at the Joint Statistical Meetings, the two-day workshop was organized for participants to have more time for discussion and for chairs to speak with each other and take advantage of the many outside speakers in the Washington, DC, region. Indeed, speakers included BLS Commissioner Erica Groshen and four leaders from various business sectors, four NIH and NSF officials, two leaders from the statistical community speaking about mentoring and junior faculty issues, and various data science research and education speakers.

In the session on workforce demands and needs, the four industry leaders affirmed that the demand for statisticians continues to be strong though the titles have evolved to include data scientist, quantitative analyst, and others. They also spoke highly of the unique contributions statisticians bring to the workplace, including the ability to handle complicated data structures and quantify and communicate uncertainty. In addition, they uniformly emphasized the importance of today's statisticians being able to do the following:

- Communicate well, including the ability to explain and interpret technical results and understand business/scientific context of analysis
- Work effectively as part of a group/team with diverse backgrounds
- Program and use modern collaboration software

When asked about the challenges of educating for both breadth (e.g., communication, teamwork) and depth, the industry panelists emphasized the importance of both and noted the desirability of the “T-shaped” researcher, where the stem of the “T” represents the depth of knowledge in statistics and the top bar represents, among other things, the ability to integrate and apply that knowledge to a broader context/setting. It was also noted how the data science era had expanded the “T-shaped” researcher into a

## Organizing Committee

**David Hunter**, Penn State

**Varghese George**, Augusta University

**Xihong Lin**, Harvard School of Public Health

**Sally Morton**, Virginia Tech University

**Sarah Nusser**, Iowa State University

**Jean Opsomer**, Colorado State University

**Bruno Sanso**, University of California, Santa Cruz

**Arnold Stromberg**, University of Kentucky

“Pi-shaped” researcher, where the second stem represents depth in a domain specialty.

Emphasizing the importance of being able to work in teams, Erik Andrejko said it was in the multidisciplinary team settings that the “magic happens.”

In addition to wearing his Westat hat, David Morganstein also spoke from his perspective as the 2015 ASA president, sharing the ASA's efforts to convey the importance of communication, teamwork, and leadership skills.

The data science education panel was perhaps the most diverse, with a computer science dean, the *NY Times* chief data scientist, the founder of a business analytics master's program, a statistician serving as university administrator, and a statistician leading an undergraduate data science program. The need to understand employer needs was a strong theme, as was the need to encourage collaboration across disciplines.

Michael Rappa spoke to the advantage of designing courses from scratch. Andrew Moore spoke passionately about the importance of computer scientists working together with statisticians, emphasizing that he views Carnegie Mellon's successful data science initiatives to be the result of “faculty solving big problems together.” He also discussed the importance of looking at the data science life cycle, from data creation/capture/collection and data processing to analysis/modeling and decision making to data preservation/sharing/protection.

Chris Malone provided insights into the challenges of moving from a course-based perspective to a skills and knowledge perspective in the development of an undergraduate data science program. He also mentioned their Midwest Undergraduate Data Analytics Competition to provide experience for students and connect them with potential employers. His take-away

## MORE ONLINE

The full agenda with the publicly available slides is linked from the chair workshop webpage <http://bit.ly/2exKlav>.

The organizing committee is working on a whitepaper summarizing workshop take-aways and expects to distribute it during the academic year.

## Workshop Themes and Speakers

### PROFESSIONAL WORKFORCE: DEMAND AND SKILLS

**Erica Groshen**, Commissioner, Bureau of Labor Statistics

**Erik Andrejko**, Vice President of Science, Head of Data Science, Monsanto/The Climate Corporation

**David Morganstein**, Vice President and Director of Statistical Staff, Westat

**Christopher Peterson**, Vice President of Data Science and Assistant Chief Model Risk Officer, Capital One

**Aarti Shah**, Senior Vice President and Chief Information Officer, Eli Lilly and Company

### FEDERAL RESEARCH FUNDING

**Chaitan Baru**, Senior Adviser for Data Science, NSF Computer and Information Science and Engineering (CISE) Directorate

**Michelle Dunn**, Senior Adviser for Data Science Training, Diversity, and Outreach, NIH Office of the Associate Director for Data Science

**Michael Lauer**, Director of Extramural Research, NIH

**Michael Vogelius**, NSF Division of Mathematical Sciences (DMS), Mathematical and Physical Sciences (MPS) Directorate

### DRIVING THE CONVERSATION: EDUCATION IN THE AGE OF DATA SCIENCE

**Andrew Moore**, Dean, School of Computer Science, Carnegie Mellon University

**Chris Wiggins**, Chief Data Scientist, *The New York Times*; Columbia University

**Michael Rappa**, Institute for Advanced Analytics, North Carolina State University

**Chris Malone**, Department of Mathematics and Statistics, Winona State University

**Sarah Nusser**, Vice President for Research, Iowa State University

### SUPPORTING AND MENTORING JUNIOR FACULTY

**Genevera Allen**, Rice University

**Sally Morton**, Dean, College of Science, Virginia Tech University

message was “undergraduates can do data science.”

To make the case for the important role statisticians can play in enabling open science and open data sharing, Sarah Nusser described the myriad issues involved with open science. We are in the era when data sets must be made more accessible, she noted, yet their proliferation and, in many cases, sheer size call for smarter digital curation systems. Such systems require effective communication of the information shared, she added, and this hinges on good statistical design and documentation, starting at the beginning of a research project. One place for statisticians to engage is to become familiar with the move toward open data and share good practices in designing and documenting studies via courses and collaborations between students and researchers.

In the junior faculty and mentoring session, both Genevera Allen and Sally Morton described the changing academic environment in which junior faculty members are becoming more interdisciplinary, team-based research more prevalent, and professional outlets more diverse. Software, nontraditional journals, and online presence were among the examples cited of elements that will increasingly comprise promotion dossiers in the future. In terms of mentoring junior faculty, both speakers made the case for a long-term perspective that values an impactful career, which might include the earning of tenure and promotions,

but only as milestones along a lifelong path. The benefits of mentors from inside and outside the department, and the number of mentors and where help is most useful (e.g., networking, grant writing) were also discussed.

During the funding agency panel, Michael Lauer spoke to the NIH reproducibility efforts of the offices and the many places more statistical capacity is critical. Michelle Dunn described the creation of the NIH data science efforts and its current activities and offerings. Michael Vogelius and Chaitan Baru spoke to ongoing statistics and data science programs in their respective NSF directorates and an emerging collaboration on data science, the details of which should become public in the coming year.

The panels included a large number of nonstatisticians by design. Indeed, the format of the workshop, based on short presentations from panelists and copious time for questions and discussion, ensured that the conversation went in both directions by allowing the department chairs to communicate their thoughts on many issues to the diverse group of panelists.

Workshop participants praised the organizers for the value and enjoyment of the speakers and discussions. Making this workshop a periodic event was highly recommended and the officers of the Caucus of Academic Representatives will discuss whether it will be annual or biannual and how to synchronize it with the half-day JSM workshop. ■



# The Fulbright Scholar Program, STEM, and Scholars

Catherine Matto, STEM Discipline Lead, Fulbright U.S. Scholar Program

**T**he Fulbright U.S. Scholar Program welcomes applications from professionals and academics in all disciplines to conduct research and/or teach at the university level in more than 125 countries.

Introduced after World War II, the Fulbright Program seeks to promote mutual understanding through person-to-person exchange—in the classroom, community, and beyond. These opportunities are listed in the program's online catalog of awards at <http://catalog.cies.org>, along with the application.

Using the catalog, applicants identify a country and award. They then develop a proposal that reflects their interests and expertise and contributes to their field. The annual competition opens in February, with an August 1 deadline (for grants that would take place during the 2018–2019 year).

Many awards do not require applicants to have a connection with an institution abroad, and assistance is available to create those connections.

Grants range from two to 12 months and some allow the scholar to split the grant across multiple years (typically four to six months over two years). There are also awards for multi-country projects.

What does a strong application look like? Applicants are encouraged to match their expertise and interest with the award description, contact the program staff listed in the award description for guidance on selecting an award that is a good fit, and consult the application guidance (<http://bit.ly/1nIQ7Tj>)—including review criteria and process—for more information. There are also sample project statement extracts on the website to help applicants consider how they might address certain aspects of the program, such as their research methodology, need to do the research in the proposed country, and expected effect.

*Amstat News* wanted to know more about applying for a Fulbright scholarship as a researcher so we interviewed past scholars and asked them why they applied and what they learned from the program.



## MICHAEL SCHUCKERS

**Where you spent your scholarship year:** VTT Research Institute, Espoo, Finland

**Period you were abroad:** August 2013 to January 2014

**Michael Schuckers** is Rutherford Professor of Mathematics, professor of statistics, and director of the Peterson Quantitative Resource Center at St. Lawrence University. He holds a doctorate in statistics from Iowa State and is author of *Computational Methods for Biometric Authentication*.

**Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.**

I worked with the bioinformatics group at VTT on a variety of small statistical data analysis issues and a larger project on multivariate discrimination of longitudinal diabetes data. My boss at VTT, Marko Sysi-Aho, and I are working on a manuscript on that work. Finland has high rates of Type I diabetes, and so there is a good deal of diabetes work happening there.

**What or who inspired you to apply for the scholarship?**

The Fulbright program is a tremendous opportunity to be in another country, to create or strengthen research collaborations, and to have many of your expenses (e.g., housing) covered. For me and my family, the timing was right. My wife and I wanted to expose our children—who have grown up in a small rural town near the Canadian border—to other countries and other cultures. We had previously spent a semester during a previous sabbatical in Cagliari, Italy, and that experience was fantastic.

Additionally, my father had applied to be a Fulbright Scholar in 1964, but the program (in Iran) was cancelled before he found out whether he was accepted.

**Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.**

The biggest challenge was deciding on which country to apply. I did not have a great deal of professional connections with international colleagues outside of England, France, and Italy. Those are very popular destinations for Fulbright applicants. We spoke extensively with a program manager when she visited campus. The entire staff at the Council for International Exchange of Scholars (CIES) was incredibly helpful and insightful about how to apply and to what programs to apply. Perhaps the most rewarding aspects of our trip were the impacts that our time in Finland had on our children, who were 8, 10, and 13 then. They gained appreciation for international travel, for Finnish culture, for living in an urban environment, and for being the outsider. For me, my time as a Fulbrighter provided an opportunity to develop another area of research with a diverse group of international colleagues.

**How has the experience changed your research, teaching, and other professional or personal activities?**

Professionally, I was able to use my time in Finland to establish a new area for my research: classification of longitudinal data. The techniques and approaches I learned over the course of my time at VTT, especially the more computational ones, have found their way into several of my courses. This experience had also led me to think more broadly about my role as mentor and coach to new generations of statisticians and researchers. On the personal side, we bought a small sauna this past year after having one in our apartment in Finland. There are 5 million people in Finland and about 2 million saunas.

**What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)**

Our experience was tremendous, and I would certainly encourage any statistician who was interested to apply. I would say that starting early is important, as is deciding on the country and the institution. Use your network of international colleagues and the staff at CIES to help with those choices and your application. For me, the biggest challenge of applying is choosing among the various programs that are offered and picking one to apply for.



**ANTHONY HAYTER**

**Where you spent your scholarship year:** Chulalongkorn University, Thailand

**Period you were abroad:** 2011–2012 and 2014

**Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.**

I visited the department of statistics at Chulalongkorn Business School, hosted by Seksan Kiatsupaibul. Chulalongkorn University is the oldest university in Thailand and has long been considered the country's most prestigious university. I was able to participate in several research projects the university is conducting.

First, I participated in a national survey of the effectiveness of microfinance loans from the government to rural communities. These short-term loans are vital for

the country's farming communities, and the survey is an important tool for improving their management.

I also helped analyze credit risk ratings of Thai businesses. The purpose of this project is to develop a model to predict these international credit ratings based only on basic well-known accounting ratios. This is part of a larger project to provide an alternative framework to calculate default correlations and "credit value at risk" measures with a credit-scoring model.

Furthermore, I was able to work on a risk management study for Thailand's rural social security program. The objective of this project is to develop

**Anthony Hayter** is a full professor in the department of business information and analytics at the University of Denver and former department chair. He earned an MA in mathematics from Cambridge University, England, and a PhD in statistics from Cornell University. He is the author of the textbook *Probability and Statistics for Engineers and Scientists*.

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Perhaps one of the most rewarding aspects of my Fulbright was working with the incredibly accomplished students at Chulalongkorn University... Though my visits to Thailand were short, the connections I made are long term.

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statistical tools to manage the risks that arise in micro-financial systems operated by local communities in rural areas of Thailand.

Finally, I collaborated on the analysis of data concerning the inter-arrival times of abnormal internet connections for a statistical research team's server. A web server is often subjected to attacks by hackers, which can deteriorate the service or bring down the server. It is therefore common for a server to protect itself with a security system, and our task was to develop a protection system with an algorithm that identifies abnormal connections from external servers in order to bar them from entering the system.

**What or who inspired you to apply for the scholarship?**

I was greatly inspired to pursue this Fulbright by the quality of the faculty at Chulalongkorn University and the various opportunities the university provides to participate in Thailand's statistical community. For example, the department of statistics at Chulalongkorn University has agreements with the National Statistical Office of Thailand to conduct joint research projects. This office is responsible for the overall collection and assimilation of statistics in Thailand. Personally, I have always felt that research and statistical work are much more rewarding when conducted in collaboration with colleagues, and the Fulbright allowed me to benefit from exposure to new problems and the expertise of new colleagues.

**Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.**

The enduring impressions of my work in Thailand are the hospitality provided by my Thai colleagues, together with their good-natured cheerfulness. I was also impressed by the vibrant statistical community and the quality of its work. Driving through rural Thailand in a minivan with my colleagues, in order to meet and interview the local community leaders as part of our data-collection efforts, was a happy and unique experience. Meeting in the local temples, our student team busily transferred the data from the stacks of handwritten account books to their computers. Perhaps one of the most rewarding aspects of my Fulbright was working with the incredibly accomplished students at Chulalongkorn University, writing research papers with them, and advising and helping them to apply for doctorate programs in the west. Though my visits to Thailand were short, the connections I made are long term.

**How has the experience changed your research, teaching, and other professional or personal activities?**

My connections with Chulalongkorn University have been particularly productive for research publications due to the assimilation of our different skills and experiences. In addition, my Fulbright experiences have provided a wealth of interesting experiences and examples for classroom teaching. It is so rewarding to realize how mutual interests in Big Data analysis and theoretical concepts can unite people from otherwise different cultural backgrounds and experiences.

**What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)**

The opportunities to become involved in data collection and analysis in different parts of the world are immense. The Fulbright offers particularly good opportunities for applied statistical work. Applications have a great chance of success if they can demonstrate how the visitor can become involved in statistical projects in the host country, rather than be limited only to theoretical work, which could be done anywhere.





## MEHDI RAZZAGHI

**Where you spent your scholarship year:** Warsaw, Poland

**Period you were abroad:** September 2014 – June 2015

### **Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.**

My Fulbright experience was academically rewarding and culturally enriching. Not only was I able to collaborate with colleagues from a highly respected academic institution, but teaching at the University of Warsaw was an invaluable experience. During my time at Warsaw University, I collaborated on a research problem to explore the application of Poisson mixtures for modeling count data with overdispersion and underdispersion. I also taught a graduate-level course titled “Statistical Models in Toxicology.” In addition, I gave two seminars for the statistics faculty and offered tutorial sessions in mathematical statistics to a group of Polish students eager to learn mathematics in English. Among many side benefits of my time in Poland, I learned facts about the European culture and history in general, and especially about Poland. I took an elementary Polish history and culture course and a beginning Polish language course in the spring semester of 2015 at the University of Warsaw.

### **What or who inspired you to apply for the scholarship?**

For a long time, I had been thinking about how I wanted to spend my sabbatical leave. I always envisioned my sabbatical leave to give me a new experience in my academic career and provide an opportunity to explore new dimensions in my profession. Although I had heard of the Fulbright opportunity, it was one day over lunch with the university provost, Ira Blake, that I discussed my sabbatical plans and she suggested the Fulbright fellowship. In addition, my own brother, Mohesn Razzaghi, who is a professor of mathematics at Mississippi State University, had recently applied and was awarded a Fulbright fellowship in Romania. Upon his return, he also encouraged me to apply. I contacted some colleagues at the University of Warsaw about the idea of spending an entire academic year at that university. They welcomed the idea and that led to my application.

### **Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.**

Clearly, when one is leaving home for several months and going to a different country, there are many arrangements and preparations that must be made, ranging from health care to finding suitable accommodations. Fortunately, I did not have any school-age children, but I know finding schools is always a big challenge for families who travel with young children. But all of these obstacles can easily be overcome.

Preparing the application package requires time and attention, but the Council for International Exchange of Scholars (CIES) is quite helpful and provides useful guidelines. Living in Europe provided me the opportunity to travel a little and see some places of interest. The most memorable experience was the day I visited Auschwitz and Birkenau concentration camps outside Krakow.

### **How has the experience changed your research, teaching, and other professional or personal activities?**

Through this valuable opportunity, I was able to add a new dimension to my teaching, collaborate and share experiences with Polish colleagues, and learn about Polish people, their history and culture. Upon my return, I realized how much the Fulbright opportunity had enhanced my professionalism, making me a better educator and more beneficial to my home institution. Conversely, I am certain that my students and colleagues at Warsaw University benefited tremendously from my visit as evidenced by their evaluations and other communications.

### **What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)**

Back in 1946, Sen. [J. William] Fulbright had a vision. He believed it is only through educational and cultural exchange programs that we can engage constructively with the community

**Mehdi Razzaghi** is professor of statistics at Bloomsburg University. He earned his PhD from the University of London in 1977 and is the recipient of the Faculty Recognition Award (2003) and Outstanding Scholarship Award (2012). He has collaborated with the U.S. Food and Drug Administration and served as a consultant with the U.S. Environmental Protection Agency. He also has been the recipient of grants from the National Institutes of Health and International Life Science Institute.

of nations. His vision was to “increase mutual understanding between the people of the United States and other countries through the exchange of persons, knowledge, and skills.” I believe the Fulbright program provides superb opportunities for international collaboration and interaction. The Fulbright program is very versatile and has

many components. The core program, to which I applied, is normally for a period of one or two semesters, but there are other programs for shorter periods, as well. The biggest challenge in applying is perhaps finding a suitable host institution and developing an academic relationship with that institution.



## RANDY CARTER

**Where you spent your scholarship year:** The C.R. Rao Advanced Institute of Mathematics, Statistics, and Computer Science (AIMSCS), Hyderabad, India

**Period you were abroad:** December 23, 2015, to June 30, 2016

**Randy Carter** has been professor/professor emeritus of biostatistics, SUNY-Buffalo, where he was founding director of graduate studies and director of the Population Health Observatory, since 2003. He worked previously at the University of Florida and the Radiation Effects Research Foundation.

### Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.

I was awarded a Fulbright-Nehru academic and professional teaching and research grant. I taught a biostatistics course for fourth-semester graduate students in the school of mathematics and statistics at the University of Hyderabad.

My primary research goal was to initiate ongoing collaborations to develop methods of Big Data analytics with emphasis on high-dimensional data analysis. Four projects with Sailu Yellaboina and his group at AIMSCS involving methods/tools development, with applications to various subject areas, are ongoing. We have written a concept proposal for the Indian Department of Biotechnology (DBT) to develop a center of excellence in statistical bioinformatics.

I also initiated joint work with Saumyadipta Pyne at the Indian Institute of Public Health (IIPH). This led to my appointment as adjunct faculty member at IIPH-Hyderabad. UB biostatistics will participate in Pyne's proposed health analytics network along with other institutions in the U.S. and India.

### What or who inspired you to apply for the scholarship?

In 2012, I attended a conference at the AIMSCS. I had been at the Radiation Effects Research Foundation—in Hiroshima, Japan—as a U.S. National Academy of Science (NAS) employee from 1989–1992. My stay there overlapped with a handful of other NAS employees. I observed the mutual benefits of such visits first-hand and

thought AIMSCS might also benefit from hosting visitors. I asked the director if he had considered doing so. It was a general question, but his answer was personal and stuck with me. Two years later, a friend who had been a Fulbright Scholar in Africa was telling me and my wife about his Fulbright experiences. It motivated us to apply. Based on our previous experience in Japan and the comments of the AIMSCS director one year earlier, we narrowed our choices to Japan or India. We chose India for personal reasons, and we each received an award.

### Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.

I learned on March 1 that the three members of the AIMSCS's bioinformatics group, with whom I was collaborating, had received termination letters effective March 31. They had been doing a good job, but the institute simply had no money to support bioinformatics research any longer. We immediately turned our attention to writing the concept proposal mentioned above and to securing bridge funding for the three faculty until the grant could be written and funded. This was the biggest challenge of my time as a scholar, and it will be the biggest reward if we can successfully meet the challenge. It is an ongoing effort, but we are close to an agreement with a large multinational corporation that may 'save the day.'

The most memorable aspect of our six-month stay was simply living in the very different, colorful, vibrant, laid back, and, yes, chaotic society of India.

**How has the experience changed your research, teaching, and other professional or personal activities?**

The Fulbright experience promises to have a particularly great effect on my future professional activities. It created new opportunities that would not have been available otherwise. For example, I have been invited to serve on the international advisory board of SRM University in Chennai, India. Also, Pyne and I are planning to co-edit a Springer volume on health care informatics, titled *Health Data Analytics and Disease Modeling*, together with Mark Roberts at the University of Pittsburgh. I also anticipate continuing involvement with the AIMSCS, the University of Hyderabad, School of Medical Sciences, and the IIPH-H as an adjunct faculty member. These are exciting opportunities that came from the great respect afforded to Fulbright-Nehru Scholars in India.

**What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)**

I would encourage them to apply! There were no notable obstacles to applying. The Institute of International Education/Council for International Exchange of Scholars (IIE/CIES) handles applications. Their staff was incredibly helpful. My wife and I both applied for grants, which made the process easier for both of us. The hardest part about it was waiting for feedback at each stage of the review process. There were three reviews of our proposals, followed by a medical clearance and other administrative requirements, that took about a year to navigate. It took a long time, but it was not particularly difficult.

The most difficult part was the immigration process once we arrived in India. If you get a Fulbright-Nehru award, be sure to seek help to navigate the Foreigner Regional Registration Office (FRRO) requirements.



**ANUJ SRIVASTAVA**

**Where you spent your scholarship year:** University of Lille 1, Lille, France

**Period you were abroad:** August 2014 – July, 2015

**Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.**

I had a fantastic time in France, both professionally and personally. Professionally, I used this period to develop a significant collaboration with my colleagues at the University of Lille, with whom I had some prior work already.

The general area of my project was to advance computational techniques for statistical analyses on shape manifolds for use in applications involving human biometrics and activity evaluation. These techniques were developed for applications in which noninvasive, remote, and/or wearable sensors are used in cooperative environments to observe, evaluate, and regulate activities of individuals or a group of humans over large observation periods. Along with my collaborators, I finished two papers in this area and developed ideas for future publications.

I also used this time to finish a textbook, *Functional and Shape Data Analysis*, written jointly

with Eric Klassen of FSU. This textbook is being published in the Springer series on statistics this summer. The book was a major undertaking and being on a sabbatical was critical to its success.

**What or who inspired you to apply for the scholarship?**

I was always interested in spending extended time in France for two reasons: (1) my wife's connection there and (2) outstanding research by French groups in my areas of interest. In 2013, I attended a presentation by a CIES (an agency that oversees Fulbright competition) official at FSU, who helped explain the main ingredients of an application. During the summer of 2014, I came across an announcement for a U.S.-France regional Fulbright award for the Pas de Calais region. I discussed it with my collaborators in Lille and they enthusiastically supported the idea of applying. Part of the reason for applying was, of course, to promote my scholarship and research through external collaborations, but I

**Anuj Srivastava** is a professor in the department of statistics and a distinguished research professor at Florida State University. He earned his PhD from Washington University in St. Louis and has held several visiting positions in the United States and overseas. His research interests include functional and shape data analysis and statistical inferences on nonlinear manifolds.

was also interested in providing an interesting and unique experience for my family—for my children to learn and appreciate another culture.

**Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.**

One of the most difficult parts for me was to be in a foreign environment, especially with a foreign language, for such a long period. Not only can the work schedules of people around you be different, but their academic focus and cultural habits may not be the same as yours. However, I learned to adapt and even enjoy these habits (especially longer lunches and frequent coffee breaks) rather quickly. My progress in learning French was slow, and that was a weak point of my stay there.

It was also a challenge to find schools for our two children and to get them started. Like me, they also had some difficulties initially, but they soon adapted to the system there. There were many logistical issues as we closed our home for a year and moved abroad, but they all paled in comparison with the wonderful experience our family had during this stay abroad. The people at Franco-American Fulbright commission in Paris were very helpful and active in making this stay an enjoyable experience.

**How has the experience changed your research, teaching, and other professional or personal activities?**

The stay in Lille enabled me to grow my external collaborations in multiple ways. As planned, I collaborated and published with researchers at Lille. Also, I got a chance to visit nearby places in Europe (England, South France, etc.) and establish contacts with people there. Some of these visits have led to initial papers and plans for larger projects, including an NSF proposal. I also attended several conferences and workshops in Europe, since distances are relatively shorter and trains make it easier to travel.

I learned about the typical PhD process in Europe and participated in several “juries” or PhD committees in France.

This Fulbright stay was a memorable experience overall and broadened my horizons in both a professional and personal sense.

**What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)**

In talking to other Fulbright scholars, I felt the biggest obstacle in applying was to choose a place/institution and engage researchers at that institution

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in developing a coherent proposal. This, of course, requires early planning and a lot of legwork before a decent proposal emerges. In case you are planning to go with your family, it becomes necessary that the destination also offer an interesting engagement for your family members.

The ingredients for a good proposal include the following:

- Select an institution of interest
- Contact like-minded researchers for a proposed collaboration
- Develop a collaborative proposal that is reasonable for the duration of stay proposed
- Seek referees who can provide a strong support for that proposal

It should be kept in mind that the Fulbright program is based on mutual agreements between the USA and individual countries. Consequently, some countries offer a larger number of scholarships than others. Also, some programs outline specific areas of research and geographical regions in a country as more important than others.

In preparing my application, I already had a few things going for me: (1) I already had an emerging collaboration with the researchers at the University of Lille 1; (2) my wife comes from that region of France with most of her family still living there; and (3) there was a specific Fulbright program offered by the Nord Pas de Calais region of France that contains Lille. So, obstacles for me were relatively minor—deciding to apply and actually prepare the application material.



## WILLIAM ROSENBERGER

**Where you spent your scholarship year:** Aachen, Germany

**Period you were abroad:** August – December 2014

### Tell us about your time as a Fulbright Scholar, including a brief description of your project and what you accomplished.

I was visiting the department of medical statistics at RWTH Aachen University, where I worked on the second edition of my book *Randomization in Clinical Trials*, and worked with the statisticians there on investigating properties of randomization procedures for small-population clinical trials.

### What or who inspired you to apply for the scholarship?

I had received a Theodore von Karman Fellowship to visit Aachen the year before, so I was familiar with the work they were doing and had already begun some collaborations. The Fulbright was an obvious mechanism of support for a semester abroad, although Fulbright awards to Germany are highly competitive.

### Describe the biggest challenge and reward (or most memorable experience or impression) during your time as a scholar.

There were no challenges! Just the rewards of being able to focus on research for a full semester.

### How has the experience changed your research, teaching, and other professional or personal activities?

I finished the second edition of my book and developed wonderful collaborations that may last a lifetime. I also was able to give five or six invited talks throughout Europe.

### What advice do you have for statisticians thinking about applying? (What was the biggest obstacle for you when applying for the Fulbright Scholarship?)

The proposal process is quite demanding, including a State Department physical exam. The German-American Fulbright committee funded only six or seven of these during the year that I applied, and only two were in the sciences (heavily weighted toward social sciences). ■

### William Rosenberger

is university professor and chair of statistics at George Mason University. He earned his PhD in mathematical statistics from The George Washington University and has spent much of his career developing statistical methodology for randomized clinical trials. He has written two books on the subject: *Randomization in Clinical Trials: Theory and Practice* and *The Theory of Response-Adaptive Randomization in Clinical Trials*.



# 2015 Salary Survey of Business, Industry, and Government Statisticians

Patricia Hall and Varghese George, Augusta University

The survey was conducted under the directives of Donna LaLonde, ASA director of strategic initiatives and outreach; Ron Wasserstein, ASA executive director; and the Statistical Partnerships among Academe, Industry, and Government Committee.

The ASA contacted the Statistical Consulting and Survey Center in the Augusta University Department of Biostatistics to help design and analyze the data for a survey of the association's nonacademic members in the United States employed by business, industry, or government. Members were asked to report their annual base salary (in dollars) and instructed to include bonuses, incentives, or other forms of monetary reward. Salary was "annualized" for part-time employed respondents. All salary statistics are reported as full-time equivalents in dollars per year. Salary information, in the form of percentiles, is for a 12-month period.

The ASA sent the survey to members in their database of business, industry, and government statisticians. Of the 5,296 with valid email addresses who were invited to participate, 1,157 responded to the survey. Based on the responses received, it was determined that 126 individuals were not eligible to be included in the final analysis. Those ineligible were either employed in academia, unemployed, not employed as a statistician, retired, or reported that they did not meet the definition of a statistician. When adjusted for delivery failure, eligibility, and nonresponse, 1,031 (1,157 – 126)

eligible responses were received from an adjusted universe of 5,170 eligible members (5,296 – 126) for an adjusted response rate of 20%.

Table 1 reports salary percentiles categorized by employer type, geographic region, managerial responsibility, gender, highest degree, years of experience, and application area or job type. Salary percentiles—cross-classified by years of experience, highest degree, and whether the respondent had managerial responsibility—are given in Table 2. Table 3 reports salary percentiles cross-classified by employer type and highest degree. Salary percentiles cross-classified by employer type, application area or job type, and highest degree are given in Table 4. Note that there were too few respondents with bachelor's as their highest degree to be included in tables 2–4.

A final report of the survey is available at <http://bit.ly/2ekVeKx>. In addition to the salary tables presented here, the final report details the survey design, its administration and implementation, survey response rate, respondent characteristics, and various descriptive statistics for selected survey items. The survey questionnaire and email invitation/reminder message also are appended to the final report.

			Percentiles				
		n	10	25	50	75	90
Total Sample		1031	90.8	113.0	150.0	200.0	293.3
Employer	Federal Government	199	92.5	110.0	135.0	157.3	177.0
	State or Local Government	16	75.0	80.0	105.5	137.5	202.6
	For-Profit Business or Industry	620	97.0	120.0	161.0	236.5	300.0
	Nonprofit Organization	122	75.0	92.0	120.0	152.0	200.2
	Self-Employed/Private Consultant	59	100.0	120.0	180.0	275.0	360.0
	Other	15	90.0	100.0	117.0	140.0	158.0
Geographic Region	Northeast (CT, MA, ME*, NH*, NJ, NY, PA, RI, VT)	229	100.0	135.0	180.0	250.0	350.0
	Beltway (DE, DC, MD, VA)	224	95.0	115.5	146.0	168.1	220.1
	West (AK, AZ, CA, CO, HI, ID, MT*, NV, NM, OR, UT, WA, WY)	209	87.5	110.0	144.6	200.0	300.0
	Midwest (IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI)	199	80.0	106.0	133.0	180.0	265.0
	South (AL, AR, FL, GA, KY, LA, MS, NC, OK*, SC, TN, TX, WV)	157	81.0	106.0	140.0	200.0	277.0
	Unknown (in US)	13	105.0	120.0	165.0	309.7	420.0
Managerial Responsibility	No	657	83.0	103.0	130.5	172.5	245.0
	Yes	374	111.0	140.0	177.1	250.0	350.0
Gender	Female	364	85.0	103.0	134.0	178.6	260.0
	Male	667	94.0	120.0	150.0	210.0	300.0
Highest Degree	Bachelor's	21	63.0	88.0	120.0	152.0	190.0
	Master's	415	80.0	97.5	125.0	170.0	240.0
	Doctorate	595	105.0	128.9	160.0	228.0	325.0
Years of Experience	0–5	184	68.0	81.5	100.0	123.0	157.4
	6–10	131	85.0	99.6	122.0	145.0	175.0
	11–15	120	100.0	114.0	142.9	189.5	250.0
	16–25	247	110.0	140.0	177.3	250.0	324.0
	26+	349	116.0	139.5	170.0	240.0	350.0
Application Area or Type of Job	Business & Industry	294	86.0	105.0	140.0	185.0	275.0
	Pharmaceuticals	263	119.0	150.0	200.0	270.0	400.0
	Health & Medicine	243	80.0	102.0	130.0	160.0	220.1
	Survey Research Methods	92	92.5	118.0	147.5	166.1	205.0
	General Consulting	72	90.0	112.3	146.0	195.0	300.0
	Other	67	90.0	100.0	125.0	187.0	240.0

\*No observations from this state

**Table 1—**  
Annual Salaries  
(\$1,000s) of  
Statisticians  
in Business,  
Industry, and  
Government

**Table 2—Annual Salaries (\$1,000s) of Statisticians in Business, Industry, and Government** Categorized by Years of Experience, Highest Degree, and Managerial Responsibility

Years of Experience	Highest Degree <sup>1</sup>	n	Percentiles				
			10	25	50	75	90
No Managerial Responsibility							
0–5	Master's	78	65.0	73.0	83.7	98.0	118.3
	Doctorate	85	85.0	99.2	110.0	145.0	162.3
6–10	Master's	43	80.0	84.0	100.0	120.0	150.0
	Doctorate	52	96.0	115.3	129.5	150.0	180.0
11–15	Master's	35	92.5	100.0	120.0	150.0	175.0
	Doctorate	40	107.0	128.5	151.5	205.8	260.0
16–25	Master's	56	96.0	110.0	141.8	172.6	247.0
	Doctorate	66	115.0	145.0	174.5	200.0	275.0
26+	Master's	72	103.0	120.0	147.5	201.5	250.0
	Doctorate	116	120.0	139.8	166.0	231.7	362.0
Managerial Responsibility							
0–5	Master's	5	63.0	90.8	120.0	123.0	150.0
	Doctorate	12	100.0	111.1	124.5	162.5	180.0
6–10	Master's	11	90.0	92.5	115.0	130.0	135.0
	Doctorate	23	107.0	120.0	140.0	175.0	250.0
11–15	Master's	16	96.0	104.0	136.6	172.5	189.0
	Doctorate	26	129.0	140.0	195.0	250.0	293.0
16–25	Master's	44	120.0	130.0	172.5	265.0	310.0
	Doctorate	77	145.0	175.0	228.0	300.0	425.0
26+	Master's	55	100.0	135.0	161.4	206.3	260.0
	Doctorate	98	135.2	158.0	210.0	300.0	450.0

<sup>1</sup>There were too few respondents with a bachelor's degree to include in this table.

**Table 3—Annual Salaries (\$1,000s) of Statisticians in Business, Industry, and Government** Categorized by Employer and Highest Degree

Employer	Highest Degree <sup>1</sup>	n	Percentiles				
			10	25	50	75	90
Federal Government	Master's	69	73.0	100.0	118.1	141.0	157.2
	Doctorate	125	98.0	118.0	144.6	160.0	190.0
State or Local Government	Master's	9	55.0	80.0	86.0	111.0	202.6
	Doctorate	7	75.0	100.0	120.0	141.8	230.0
For-Profit Business or Industry	Master's	254	85.0	104.0	140.0	187.0	252.0
	Doctorate	354	115.0	143.0	185.0	270.0	400.0
Nonprofit Organization	Master's	52	67.0	79.0	94.3	114.8	148.0
	Doctorate	67	100.0	118.0	140.0	190.0	228.0
Self-Employed or Private Consultant	Master's	26	83.3	113.6	146.8	225.0	360.0
	Doctorate	32	110.0	135.0	200.0	277.5	350.0
Other	Master's	5	100.0	102.0	117.0	130.0	140.0
	Doctorate	10	85.0	99.2	114.0	157.0	166.0

<sup>1</sup>There were too few respondents with a bachelor's degree to include in this table.



Employer	Application Area or Type of Job	Highest Degree <sup>1</sup>	n	Percentiles				
				10	25	50	75	90
Federal Government	Business & Industry	Master's	14	72.0	73.0	112.0	130.0	155.0
		Doctorate	20	98.0	100.0	112.5	154.4	171.5
	Pharmaceuticals	Doctorate	7	121.6	129.0	149.0	168.2	200.0
		Doctorate	7	121.6	129.0	149.0	168.2	200.0
	Health & Medicine	Master's	12	110.0	118.0	126.5	132.5	141.0
		Doctorate	50	99.2	128.8	146.8	160.0	201.4
	Survey Research Methods	Master's	23	96.0	110.0	139.5	155.0	170.0
		Doctorate	31	98.0	120.0	150.0	165.0	175.0
	General Consulting	Master's	7	64.4	90.8	110.0	135.0	156.7
		Doctorate	7	88.2	135.0	139.5	158.7	700.0
For-Profit Business or Industry	Business & Industry	Master's	98	80.0	95.0	125.0	160.0	240.0
		Doctorate	122	107.0	129.6	163.6	233.0	324.0
	Pharmaceuticals	Master's	82	105.0	130.0	171.8	240.0	270.0
		Doctorate	153	128.8	165.0	220.0	300.0	429.0
	Health & Medicine	Master's	39	84.5	99.0	120.0	158.0	204.0
		Doctorate	41	115.0	140.0	161.0	239.9	300.0
	Survey Research Methods	Master's	10	86.1	118.7	142.8	162.5	420.0
		Doctorate	10	114.8	130.0	162.5	221.4	229.0
	General Consulting	Master's	15	80.0	92.0	140.0	200.0	250.0
		Doctorate	21	114.5	130.0	170.0	250.0	300.0
Other (State/Local Government, Nonprofit Organization, Self-Employed/Private Consultant, and Other Employers not listed above)	Business & Industry	Master's	17	77.5	83.3	117.0	152.0	225.0
		Doctorate	11	100.0	120.0	155.0	160.0	200.0
	Pharmaceuticals	Master's	6	100.0	130.0	145.0	200.0	200.0
		Doctorate	13	110.0	125.0	200.0	275.0	350.0
	Health & Medicine	Master's	43	65.4	77.0	100.0	122.2	150.0
		Doctorate	48	85.0	113.5	134.1	177.0	228.0
	Survey Research Methods	Master's	5	73.0	81.0	86.9	125.0	130.0
		Doctorate	9	90.0	120.0	205.0	250.0	500.0
	General Consulting	Master's	7	88.0	96.0	170.0	316.7	360.0
		Doctorate	13	108.0	135.0	175.6	190.0	240.0
	Other	Master's	5	90.0	92.5	99.1	133.3	400.0
		Doctorate	15	99.2	110.0	175.0	205.0	300.0

**Table 4—**  
Annual Salaries (\$1,000s) of Statisticians in Business, Industry, and Government Categorized by Employer, Application Area or Type of Job, and Highest Degree

<sup>1</sup>There were too few respondents with a bachelor's degree to include in this table.

# Review of Soft Skills Training Available

Based on informal feedback gathered at JSM in Chicago this past August, members of the ASA's Committee on Career Development (CCD) think there is a need for a centralized directory of ASA resources in "soft skills" training. For this purpose, soft skills training (SST) includes workshops, webinars, or other training in skills such as effective communication, collaboration, leadership, and influence.

The committee has begun creating a directory for SST using members' knowledge to generate a preliminary list (see below). At this time, the CCD will focus on recurring and high-level training available through the ASA.

All ASA members are invited to review the directory and make suggestions for additional resources available on similar topics and topics they would like to see covered in the ASA's soft skills training resources. Suggestions will be used to modify the working directory, which will be finalized by the end of 2016. The directory will be updated annually in the first quarter of each year by CCD.

The directory will be used to aid ASA committees, sections, and other groups in developing new soft skills training. Suggestions are strongly encouraged and can be submitted to the CCD through Donna LaLonde at [DonnaL@amstat.org](mailto:DonnaL@amstat.org). ■

## ASA Committee on Career Development Soft Skills Training (SST) List

Title	Link	Student	Early Career	Middle Career	Late Career	Retired
The Collaborating Statistician: Publishing in a Peer-Reviewed Journal	<a href="http://bit.ly/2eO8Hxb">http://bit.ly/2eO8Hxb</a>	X	X	X	X	
Collaborating with International Colleagues, or Should It Be Inter ... Colleagues?	<a href="http://bit.ly/2eig25q">http://bit.ly/2eig25q</a>		X	X	X	
ASA Fellowships & Grants	<a href="http://bit.ly/2eeRANe">http://bit.ly/2eeRANe</a>	X	X			
Essential Skills for Successful Collaboration (draft)	Pending					
Communicating Statistics to Non-statisticians	<a href="http://bit.ly/2aFsWXt">http://bit.ly/2aFsWXt</a>	X	X	X		
Women in Statistics and Data Science	<a href="http://bit.ly/2efg2nR">http://bit.ly/2efg2nR</a>	X	X	X	X	
Annual Writing Workshop at JSM	<a href="http://bit.ly/2eCziOy">http://bit.ly/2eCziOy</a>	X	X	X	X	
Ongoing workshops @ Stats.org	<a href="http://www.stats.org/">http://www.stats.org/</a>	X	X	X	X	
Student Paper Competitions	<a href="http://bit.ly/2erJ16l">http://bit.ly/2erJ16l</a>	X				
Accreditation	<a href="http://bit.ly/2eCBpC3">http://bit.ly/2eCBpC3</a>	X	X	X	X	
ASA Awards & Recognitions	<a href="http://bit.ly/2e3wjww">http://bit.ly/2e3wjww</a>	X	X	X	X	X
ASA Fellows	<a href="http://bit.ly/2dp7O9i">http://bit.ly/2dp7O9i</a>					
Statistical Leadership: Developing Leaders Through ASA Service	<a href="http://bit.ly/2e3A5pF">http://bit.ly/2e3A5pF</a>		X	X	X	X
Leadership Quotes	<a href="http://bit.ly/2dp6jYD/">http://bit.ly/2dp6jYD/</a>	X	X	X	X	X
Outlook on Statistics Leadership	<a href="http://bit.ly/2dZh4nm">http://bit.ly/2dZh4nm</a>		X	X	X	
Ethical Guidelines for Statistical Practice	<a href="http://bit.ly/2dpbkjK">http://bit.ly/2dpbkjK</a>	X	X	X	X	X
Statistical and Team Leadership: My Career Development Journey	<a href="http://bit.ly/2dIsvYu">http://bit.ly/2dIsvYu</a>	X	X			
Science Policy and Advocacy	<a href="http://bit.ly/2dyj5Y9">http://bit.ly/2dyj5Y9</a>			X	X	X
Leadership Development Webcast	<a href="http://bit.ly/2eeUPLO">http://bit.ly/2eeUPLO</a>	X	X	X		
Mentoring: Its Benefits and How the ASA Can Help You Get Involved	<a href="http://bit.ly/2eiiOac">http://bit.ly/2eiiOac</a>	X	X	X	X	X
What Is Mentoring, and Why Is It a Good Thing?	<a href="http://bit.ly/2dZgmGx">http://bit.ly/2dZgmGx</a>	X	X	X	X	X
Peer-to-Peer Mentoring: How It Fits into the Statistics Living Learning Community at Purdue	<a href="http://bit.ly/2dMfTWn">http://bit.ly/2dMfTWn</a>	X	X	X	X	X
Successful JSM Mentoring Workshop Gives Participants Much to Say	<a href="http://bit.ly/2efgFxC">http://bit.ly/2efgFxC</a>	X	X	X	X	X
Mentoring Program by Committee on Applied Statisticians	<a href="http://bit.ly/2e3zJzJ">http://bit.ly/2e3zJzJ</a>	X	X	X	X	X
Diversity Workshop and Mentoring Program	<a href="http://bit.ly/2e3z8h9">http://bit.ly/2e3z8h9</a>					
Technical Knowledge? Check! Experience? Check! What Else Might Help You? – Thoughts from the ASA President-Elect	<a href="http://bit.ly/2e5tAFD">http://bit.ly/2e5tAFD</a>	X	X	X	X	X

# ASA Interest Groups: *Interested?*

Council of Sections Governing Board



The American Statistical Association offers many ways for its members to connect and build networks and communities for professional development. In the August issue of *Amstat News*, the Council of Sections Governing Board shared the many benefits offered by ASA sections (see <http://bit.ly/2dp8Oub>). In this follow-up, we will describe interest groups, which are less well-known within the ASA. While interest groups offer many of the same benefits as sections and are formed as the first step in creating a section, their structure also provides unique benefits.

Like a section, an interest group is a community interested in a particular statistical theory, methodology, or application that is sufficiently broad to represent active professional interests within the scope of the association. Also like sections, there are many benefits to joining interest groups. They will help you stay up to date in the field; provide education and networking opportunities; and allow you to play a role as advocate, mentor, or leader.

Interest groups are less formal than sections and formed with an application to the Council

## ASA Interest Groups

Astrostatistics (est. 2014)

Statistics in Business Schools (est. 2008)

Lifetime Data Analysis (est. 2014)

Statistics and Pharmacometrics (est. 2014)

Transportation Statistics (est. 2003)

Uncertainty Quantification in Complex Systems (est. 2011)

Read more about interest groups at <http://bit.ly/2eCGFWn>.

of Sections (COS) Governing Board signed by a minimum of 25 individuals. Currently, there are six interest groups (see sidebar). After three years, interest groups that meet certain criteria may apply to become sections. But an interest group is not required to become a section; it can instead renew its charter every three years.

## Unique Communities for Collaboration

One reason why remaining an interest groups may be an advantage is that these informal groups can include both ASA members and non-members. This open structure means interest groups are a great vehicle to build communities around emerging areas of interest and to create unique forums for collaboration with nonstatisticians.

Active since 2003, the Transportation Statistics Interest Group (TSIG) brings together statisticians, transportation professionals, economists, and analysts who want to champion the use of statistics in transportation research. Members have been active in the Joint Statistical Meetings technical program and gather at the annual Transportation Research Board meeting. In addition to being sponsored by the ASA, the TSIG is connected to the Institute of Transportation Engineers and the UK-based Transportation Statistics User Group.

The Astrostatistics Interest Group was formed in 2014 in response to the growth of activity at the intersection of statistics and astronomy. “At the 2011 conference Statistical Challenges in Astronomy, there were some particularly great interactions between astronomers and statisticians,” says chair Jessi Cisewski. “Since then, the astrostatistics community has found its foothold, making it a good time to start an interest group.”

By establishing a group within the ASA, the Astrostatistics Interest Group is raising awareness of this application area and promoting new opportunities for collaboration. “There are abundant, diverse, challenging, and fascinating research problems astronomers face—from the smallest scales such as the particle nature of dark matter to the large-scale structure of the universe and everything in between—and we are eager for more statisticians to join this growing international community and experience the fun of exploring our universe.”

## Reflecting Our Growing Profession

As the first step in creating a new section, interest groups reflect the diverse and emerging interests of ASA members and their collaborators. This is visible now in the breadth represented by astrostatistics, transportation, and the four other interest groups.

According to chair Jack Kalbfleisch, the Lifetime Data Analysis (LIDA) Interest Group “was formally launched in 2015 and has grown quite rapidly,” with about 15% of its 240 members from outside the ASA. “Our goal was to provide a clear focus within the ASA and beyond on an important area of theory and methods with a very broad area of applications,” said Kalbfleisch. “We want to create a forum for discussing and exchanging ideas on life history and time-to-event models and methods.”

In addition to offering a newsletter and sponsoring JSM sessions, LIDA is sponsoring its first conference at the University of Connecticut in May. It will focus on science, precision medicine, and risk analysis with lifetime data.

The Statistics and Pharmacometrics Interest Group was chartered in 2014 by both the ASA and the International Society of Pharmacometrics to encourage cross-disciplinary collaboration. They have created a forum to share educational and networking opportunities, encourage cross-participation at conferences, and develop new best practices.

Statistics in Business Schools formed as an interest group in 2008 and has created a forum that provides opportunities for those interested in statistics and business education to communicate and collaborate. Their focus is on developing the business statistics curriculum for the 21st century and improving the quality of instruction in business statistics.

The Uncertainty Quantification in Complex Systems (UQCS) Interest Group was started in 2014 to support interaction among professionals and scientists working at the interface of computation, analysis, statistics, and probability. Conference collaboration has been one area of focus. In addition to sponsoring JSM and Spring Research Conference sessions, the UQCS partnered with its affiliate—the SIAM Activity Group on Uncertainty Quantification—to organize a conference on uncertainty quantification that was held in April 2016 in Lausanne, Switzerland.

All the interest groups have the opportunity to participate in the technical program at JSM. Each group is allocated a topic-contributed session and may compete for additional sessions or co-sponsor sessions.

## Interested in Interest Groups?

Interest groups provide informal and open communities to build cross-society collaboration on new and emerging areas within statistics. To join an existing group, visit the sections and interest group page at <http://bit.ly/2er00UH>. Click through to the specific interest group you are interested in and follow the instructions for joining.

If you see a need for a new community within the ASA or want to create a new forum for collaboration with professionals outside the ASA, we encourage you to consider starting an interest group. To learn more, contact Fred Hulting, COSGB chair-elect, at [fred.hulting@genmills.com](mailto:fred.hulting@genmills.com) or any member of the COS Governing Board.

We hope you will get connected to others in the ASA through a section or interest group! ■



## MASTER'S NOTEBOOK

# The World of Biostatistics Is a 'Wild West': Take Advantage



"The pharmaceutical industry is as complicated as it is interesting," says Jonathan L. Moscovici.



**Jonathan L. Moscovici** is a biostatistician at Quintiles, the world's largest contract research organization. He holds a master's degree in mathematics and statistics from McGill University in Montréal, Québec, Canada. He co-authored a chapter in the book *Big Data and Health Analytics* and is a member of the Accreditation Services Committee for the Statistical Society of Canada. He has consulted in academic, hospital, and industry settings.

Let's face it; your ninth-grade teacher was right. Math is cool. There are more opportunities available than ever before, and it's challenging for aspiring graduates to steer themselves in the direction that's right for their own goals and interests. I'd like to share a few of my experiences as a biopharmaceutical statistician that I didn't really know (but wish I did) as a grad student.

The pharmaceutical industry is as complicated as it is interesting, and it's plenty interesting. A colossal amount of work and money goes into bringing a newly discovered compound to market, and that's only if it works well ("efficacy") without intolerable side effects ("safety").

Many variables factor into decisions regarding clinical research, so it's difficult for a newcomer to get a decent snapshot of how it all works. In recent times, CROs (contract research organization) and FSPs (functional service providers) have become popular choices for major pharma companies that outsource a lot of the drug development process (e.g., data management, biostatistics, etc.).

In the past, a drug company (called "sponsor") would discover a compound and then handle all the research tasks on its own, in-house. However,

that's a big hassle, particularly from a resourcing perspective, since you never know how many people you might need to have on staff at the exact moment you want to send a drug down the pipeline. That's where CROs come in. A CRO can be contracted by sponsors to climb on board and offer a specialized set of services depending on the needs of the trial. That's where I work.

In some cases, the role of biostatistician can exist both on the sponsor side and at the CRO. Under this set-up, each clinical trial would have a biostatistician assigned at both companies. These counterparts would collaborate to produce the outputs and analyses required. This can include protocol consulting and SAP (statistical analysis plan) development. Every partnership is different, so the distribution of work varies, but you don't even realize the research team members belong to separate companies in the best of cases.

The alternative would be biostatistics being completely outsourced to the CRO.

## What Should Students Do?

A common issue is that many students find it difficult to break into the industry (assuming they

are even aware of it). It's the classic problem of needing experience to get hired, but not being able to gain experience because no one will hire you. However, certain skills can help land the entry-level positions that do exist.

First, learn SAS. I know R is cool because it's open source and a fantastic research tool. It's also the favorite programming language in many math and stats departments, and so students are not necessarily encouraged to learn SAS. However, SAS is pretty much an industry standard in pharma (and many other industries). In fact, SAS programmers on their own are highly employable, have high job satisfaction, and work closely with biostatisticians (this is actually how many people, including me, started out).

Second, students should inform themselves as much as possible about the drug process. A strong command of CDISC standards, ICH regulations, and clinical trial phases (I-IV) is part of the biostatistician's toolbox. Questions about how data are collected, processed, and delivered are nontrivial. If not covered in your curriculum, a few Google search sessions should teach you the basics of this essential information. Other resources include the ASA forums, the Biopharmaceutical Section podcast hosted by Richard Zink at SAS (<http://bit.ly/29HDI7W>), and the "Not So Standard Deviations" podcast (<http://bit.ly/2ec3DUV>). All have connected statisticians and shared useful information. For those who would rather stay anonymous, the */r/statistics* subreddit can be helpful, though much broader.

## What Can Schools Offer?

If this sort of career is even of remote interest to a student, they should know that not all mathematics departments are set up to provide the best training. It's in the student's best interest to ensure they get the right skills. They can seek faculty who know SAS or the industry, take a consulting class, take classes specifically geared toward biostatistics, organize meet-ups, and/or seek contacts online. Any experience in the clinical trial process (even from the outside) also will be a great asset.

## Specialties

I was initially surprised by the wide spectrum of specialties within the field. Over the span of several years, statisticians can discover different talents, interests, and affinities that orient their careers. This is fun because, in the long run, you can pursue your own thing, in a sense. Ours is a relatively new profession, and the nature of the job is quickly evolving. Paths can include more programming, statistician management/training, applied issues, methodological research, and specific client/sponsor specialization. It's a double-edged sword that the statistics field is still a bit of a "Wild West," since the evolution of the work creates opportunities, but it also requires vigilance.

The pharmaceutical industry is definitely interesting (using math to help cure cancer/disease is a great mantra, in my opinion), and it shouldn't be overlooked by anyone interested in health care. Look me up if you're curious, I'm happy to help if I can. It's an exciting time for statistics, but you already knew that. ■

## TAS, JQAS Call for Editors

The American Statistical Association is calling for nominations and applications for editor of the following journals:

*The American Statistician* (<http://bit.ly/2dp1i28>). The new editor's term will be from 2018–2020, with the transition beginning around September 2017.

*Journal of Quantitative Analysis in Sports* (<http://bit.ly/2eamNrC>). The new editor's term will be from 2018–2020, with the transition beginning as agreed with the current editor.

If you, or someone you know, would be an excellent editor for one of these journals, please send the nomination or application to Journals Manager Eric Sampson at [eric@amstat.org](mailto:eric@amstat.org).



Applications should include a CV, names of three references, and a letter of interest in the position that includes a brief statement of the candidate's vision for the publication, directions the candidate would pursue, and contributions she or he would make if selected as editor. Applications should be sent no later than January 20, 2017.

# MWM Makes a Difference for Small-Town Teachers

*Consider donating to ASA and help spread statistics education*

Lisbon is a quaint town in eastern Iowa that is little more than two miles from Mount Vernon, home of Cornell College. Lisbon is also home to Ann Cannon and her family. Ann is the department chair and only statistician in the department of mathematics and statistics at Cornell College.

The Lisbon school district is just as small as the town, with graduating classes that average around 40 students and grades K–12 being housed in the same building.

“Because my oldest son graduated last year and my youngest is now in 10th grade, I have known many of the teachers in the district for many years” says Ann.

Understandably, Ann has a vested interest in statistics education. She is a co-author of *Stat2: Building Models for a World of Data* and has been involved with the development and accuracy of many introductory statistics books at both the high-school and college levels.

“I have also been very involved in the AP Statistics program, having worked as a reader, a table leader, a question leader, and—for the last two years—the assistant chief reader.”

As a parent, a current school board member, and a statistics educator, Ann has a unique perspective of how statistics is being taught in school.

“One of the positive aspects of the Common Core curriculum is its focus on data and data analysis. However, many of our teachers do not have much training in statistics. They are being asked to teach information they have not been exposed to,” says Ann.

As is the case in small communities like Lisbon, teachers can be isolated from resources that can help them in the classroom. However, Ann is an active ASA member who is involved in many areas of the organization and familiar with Meeting Within a Meeting (MWM), which is offered every year at the Joint Statistical Meetings (JSM).

“Because of these issues facing our teachers, MWM is a necessary program,” says Ann. “I’ve known about MWM since it was started and have always thought that it is a good resource for K–12 teachers. And now, with the Common Core including more and more statistics in lots of areas besides math, I think MWM is even more important.”

MWM has traditionally been a program offered only at JSM. This puts a limit on who is able to attend, usually only educators in the surrounding areas.



Ann Cannon teaches statistics at Cornell College and recruited five teachers from an Iowa school to attend the Joint Statistical Meetings' Meeting Within a Meeting, which offers professional development for educators.

“I recognized that this was the only year that MWM would be offered close enough for the teachers in my area to drive to easily. Since the school district where I live is very small and not very wealthy, I figured that easy travel to the meeting was important.”

After suggesting MWM to the school principal as something the teachers may be interested in, Ann was pleasantly surprised when she learned five of the teachers signed up to attend.

“I was floored to find out the five teachers had signed up! The group included both fifth-grade math teachers, the sixth- and seventh-grade math teacher, and both high-school science teachers.”

The teachers reported they had already learned a lot by lunch on the first day and were excited to implement some of the information in their classes back home.

“There are many teachers in this country who would benefit greatly from being able to attend a workshop like MWM,” says Ann. “I understand that MWM moves around the country with JSM, but there are large swaths of the country that will never be near a JSM. It would be great if other MWMs could be held elsewhere throughout the year in addition to being held at JSM.”

When asked if Ann would encourage teachers to attend MWM again or participate in other ASA K–12 statistics education programs, she said, “Absolutely. The enthusiasm these teachers showed during the workshop was fun to see. And the bits of the session I saw were really great! I can see why the teachers were so enthusiastic!” ■

## MORE ONLINE

Please consider donating at [www.amstat.org/givenow](http://www.amstat.org/givenow) to help bring MWM to more educators across the country.

If you would like to learn more about MWM and other ASA statistics education programs, visit [www.amstat.org/education](http://www.amstat.org/education).





CSP 2016 attendees check out a poster during the conference. Join us for CSP 2017 in Jacksonville, Florida!

## Join Us for the 6th Annual Conference on Statistical Practice in Jacksonville, Florida

Amy Farris, ASA Director of Membership Development and Marketing

Will you be joining us for the sixth annual ASA Conference on Statistical Practice in Jacksonville, Florida, February 23–25, 2017? CSP provides opportunities for attendees to learn new statistical methodologies and best practices in statistical analysis, design, consulting, and statistical programming. Beyond hands-on skills development, there are also many opportunities for mentoring, networking, and engaging with colleagues!

**LEARN MORE**  
For conference updates, follow @AmstatNews on Twitter and use #CSP2017.

### Keynote Address

David Banks of Duke University will present *Snakes and Ladders: Challenges in Forging a Career in Statistics*. His talk will address the challenges facing the profession and how to manage your career to best capitalize on the move to a knowledge-based economy. Learn more at <http://bit.ly/2dqQ8Ph>.

### Mentoring Program

Both mentors and mentees are needed. Strengthen the statistics community by participating and

building a network of colleagues who will support and encourage one another. There is no cost to participate, but mentees are selected via an application process and participation is limited. Learn more and sign up at <http://bit.ly/2eKUPEL>.

### Career Service

The CSP Career Service is another benefit of attending the conference. It is a web-based system that connects candidates and potential employers so they can pursue informal meetings and interviews during the conference and have access to one another long after the meeting. All registered CSP attendees can post their résumés at no charge.

Early registration for the conference is open through January 10, 2017. For details and deadlines, see [www.amstat.org/meetings/csp](http://www.amstat.org/meetings/csp). Our goal is to maintain the intimate and personal feel of the conference, so register before the conference and courses are filled. ■





**Ying Sun**, assistant professor of statistics at the King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, won the 2016 Abdel El-Shaarawi Young Researcher (AEYR) Award from the International Environmetrics Society (TIES).

The award was established by the TIES board in 2002 to honor young statisticians who have made excellent contributions to the development of statistical and/or quantitative methods for environmental science research.

Sun received the award on July 18 during the annual Conference of the International Environmetrics Society in Edinburgh, Scotland, where she also gave a plenary talk.

TIES stated she was given the award for her “outstanding contributions to environmental statistics—in particular in the areas of spatio-temporal statistics, functional data analysis, and visualization—and for her distinguished service to the profession.”

“Sun’s strong accomplishment reflects the excellent work she is doing at KAUST,” said Mootaz Elnozahy, dean of KAUST’s Division on Computer, Electrical, and Mathematical Science and Engineering.

Sun earned her PhD in statistics from Texas A&M University in 2011, spent two years as a postdoctoral fellow at SAMSI and The University of Chicago, and worked as an assistant professor at The Ohio State University for one year before joining KAUST in 2014.

“The award is a significant recognition of my research in environmental statistics at KAUST,” Sun said. “I am very grateful for all the support and guidance I have received.” ■

The Statistics Division of the American Society for Quality

(ASQ) is pleased to announce that **A. Blanton Godfrey** is the recipient of the 2016 William G. Hunter Award.

The Hunter award was established by the statistics division in 1987 to recognize the many contributions of its founding chair to promoting the use of applied statistics and statistical thinking. The attributes that characterize Hunter’s career—consultant, educator for practitioners, communicator, and integrator of statistical thinking into other disciplines—are used to help decide the recipient.

Godfrey is well known to many in industry and academia as a visionary leader in applied statistics and quality. He has made effective contributions to a wide array of application areas that include new technology development, manufacturing, product reliability and quality, and health care quality.

The Joseph D. Moore Distinguished University Professor in North Carolina State University’s College of Textiles, Godfrey also served as dean from 2000–2014. He was chair and CEO of Juran Institute, Inc. from 1987 to July 2000. From 1973 to 1987, he was a member of the technical staff at AT&T Bell Laboratories, the last five years as head of the quality theory and technology department.

Godfrey’s interests cover many areas of mathematical and

applied statistics and quality management. He has had a long involvement in health care quality management and currently serves as a member and past chair of the board of directors for the Institute for Healthcare Improvement. He also contributed to the creation of the Malcolm Baldrige National Quality Award and served as a judge for the first three years of the award.

Godfrey has given seminars, consulted, or taught courses in more than 60 countries and his written materials have been translated, collectively, in more than 15 languages. He has personally worked with many of the top executives of leading companies throughout the world. ■

**C. F. Jeff Wu**, Coca-Cola Chair in Engineering Statistics and professor of Georgia Tech’s Stewart School of Industrial and Systems Engineering, has received the inaugural Akaike Memorial Lecture Award, sponsored by the Institute of Statistical Mathematics (ISM) and Japan Statistical Society (JSS). Wu gave the lecture September 5 in Kanazawa during the Joint Statistical Meetings of Japan.

The award is named after H. Akaike, who spent his whole career at ISM and served as its director general from 1986 to 1994. He is known for inventing the AIC (Akaike information criterion) for model selection. ■

## Obituary

### Theodore W. Anderson

Stanford professor emeritus Theodore W. “Ted” Anderson died of heart failure September 17 at Stanford Hospital. He was 98.

Anderson, who taught at Stanford for 21 years, was elected to the National Academy of Sciences and American Academy of Arts and Sciences. He was a fellow of the

American Statistical Association, Royal Statistical Society, Econometric Society, Institute of Mathematical Statistics, and American Association for the Advancement of Science.

To read more about Anderson and his life, visit the Stanford’s tribute website page at <http://stanford.io/2ex0uJQ>.

# ABOUT THE AWARD

Ethel May Newbold (1882–1933) was an English statistician and, in 1928, the first woman to be awarded the Guy Medal in Silver by the Royal Statistical Society. A detailed biography of Newbold may be found in her obituary in the *Journal of the Royal Statistical Society* at <http://bit.ly/2e0TMz3>.

## Call for Nominations for the Newbold Prize

The Newbold Prize Committee invites nominations for the Ethel Newbold Prize, to be awarded to an outstanding statistical scientist for a body of work that represents excellence in research in mathematical statistics and/or excellence in research that links developments in a substantive field to new advances in statistics.

The winner, selected in the spring of 2017, will receive \$2,800 and a certificate. The prize will be awarded at a Bernoulli World Congress, Bernoulli-sponsored major conference, or ISI World Statistics Congress. The awardee will also be invited to present a talk at one of these conferences.

**Submissions:** Each nomination should include a letter outlining the case in support of the nominee, along with a *curriculum vita*. Nominations and inquiries about the award should be sent to Oddbjorg Wethelund at [oddbjorg@math.au.dk](mailto:oddbjorg@math.au.dk). The deadline for submitting nominations is November 30.

The prize will not be awarded unless the set of all nominations includes candidates from both genders.

Further information about the Ethel Newbold Prize (and other prizes of the Bernoulli Society) can be found at <http://bit.ly/2ekSBKU>. ■

## Nominations Sought for 2018 Waksberg Award

The journal *Survey Methodology* has established an annual invited paper series in honor of Joe Waksberg to recognize his contributions to survey methodology. Each year, a prominent survey statistician is chosen to write a paper that reviews the development and current state of an important topic in the field of survey methodology. The paper reflects the mixture of theory and practice that characterized Joe Waksberg's work.

The recipient of the Waksberg Award will receive an honorarium and give the 2018 Waksberg Invited Address at the Statistics Canada Symposium, to be held in the autumn of 2018. The paper will be published in a future issue of *Survey Methodology* (targeted for December 2018).

The author of the 2018 Waksberg paper will be selected by a four-person committee appointed by *Survey Methodology* and the American Statistical Association. Nomination of individuals to be considered as authors or suggestions for topics should be sent before February 28, 2017, to Kirk Wolter, committee chair, at [wolter-kirk@norc.uchicago.edu](mailto:wolter-kirk@norc.uchicago.edu).

To view the list of previous honorees, visit the Survey Research Methods Section website at <http://bit.ly/2ex1BZW>.

## Nonclinical Biostatistics Best Paper Award

Submissions for the Nonclinical Biostatistics Best Paper Award will be accepted until March 15, 2017. The award will be presented to the winning author (or co-authors) at the 2017 Nonclinical Biostatistics Conference at Rutgers University, June 12–14, 2017.

All eligible papers must have been published (or accepted for publication) between January 1, 2010, and March 1, 2017, in an English-language refereed

journal and address a relevant topic in “nonclinical biostatistics.” Examples of relevant topics can be found in *Nonclinical Biostatistics for Pharmaceutical and Biotechnology Industries*.

To submit a paper, send a PDF copy to [john.peterson@gsk.com](mailto:john.peterson@gsk.com) with contact information for all co-authors (e.g., email addresses). Paper nominators can be one of the paper's authors or someone else.

For details about the Nonclinical Biostatistics Conference, visit <http://bit.ly/2dDyMNY>. ■

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

### Fellowships Offered in Child Development Research

The Society for Research and Child Development (SRCD) is seeking applications for its 2017–2018 policy fellowships. The two types of fellowships—congressional and executive branch—provide researchers with the opportunity to come to Washington, DC, and use their skills in child development to inform public policy.

Fellows work as resident scholars within congressional or federal agency office from September 1, 2017, through August 31, 2018. Following a two-week science policy orientation program sponsored by the American Association for the Advancement of Science, fellows receive an orientation to child development and public policy. The SRCD Office for Policy and Communications facilitates the fellowship and is available as a resource throughout the year.

#### Application Requirements:

Applicants must have a doctoral-level degree in a relevant discipline (e.g., PhD, MD, EdD), demonstrate exceptional competence in an area of child development research, and be a member of SRCD. Both early-career and advanced professionals are encouraged to apply.

The deadline to apply is December 15. More information is available at <http://bit.ly/2dt0fhN>. Questions can be emailed to [policyfellowships@srcd.org](mailto:policyfellowships@srcd.org). ■

AWARD	DEADLINE	NOMINATIONS	QUESTIONS
COPSS Fisher Lectureship and Award	Dec. 15, 2016	<a href="http://community.amstat.org/copss/home">http://community.amstat.org/copss/home</a>	
ASA Noether Senior and Young Scholar Awards	Dec. 15, 2016	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Edsel A. Pena</b> <a href="mailto:pena@stat.sc.edu">pena@stat.sc.edu</a>
Monroe G. Sirken Award in Interdisciplinary Survey Methods Research	Dec. 15, 2016	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>John L. Czajka</b> <a href="mailto:jczajka@mathematica-mpr.com">jczajka@mathematica-mpr.com</a>
COPSS Presidents' Award	Jan. 15, 2017	<a href="http://community.amstat.org/copss/home">http://community.amstat.org/copss/home</a>	
F.N. David Award	Jan. 15, 2017	<a href="http://community.amstat.org/copss/home">http://community.amstat.org/copss/home</a>	
Snedecor Award	Jan. 15, 2017	<a href="http://community.amstat.org/copss/home">http://community.amstat.org/copss/home</a>	
Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society	Feb. 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Paul S. Albert</b> <a href="mailto:albertp@mail.nih.gov">albertp@mail.nih.gov</a>
ASA W. J. Dixon Award for Excellence in Statistical Consulting	Feb. 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<a href="mailto:awards@amstat.org">awards@amstat.org</a>
Causality in Statistics Education Award	Feb. 15, 2017	<a href="mailto:educinfo@amstat.org">educinfo@amstat.org</a>	<a href="mailto:educinfo@amstat.org">educinfo@amstat.org</a>
Harry V. Roberts Statistical Advocate of the Year Award	Feb. 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>John Vanderploeg</b> <a href="mailto:vanderp@comcast.net">vanderp@comcast.net</a>
ASA Samuel S. Wilks Memorial Medal	Feb. 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Sanjib Basu</b> <a href="mailto:sanjib.ba@gmail.com">sanjib.ba@gmail.com</a>
ASA Waller Distinguished Teaching Career Award	Feb. 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Bradley A. Hartlaub</b> <a href="mailto:hartlaub@kenyon.edu">hartlaub@kenyon.edu</a>
ASA Waller Education Award	Feb. 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Bradley A. Hartlaub</b> <a href="mailto:hartlaub@kenyon.edu">hartlaub@kenyon.edu</a>
ASA W. J. Youden Award in Interlaboratory Testing	Feb. 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Blaza Toman</b> <a href="mailto:blaza.toman@nist.gov">blaza.toman@nist.gov</a>
ASA Statistics in Physical and Engineering Sciences Award	Feb. 20, 2017	<b>Ming Li</b> <a href="mailto:mli@alumni.iastate.edu">mli@alumni.iastate.edu</a>	
ASA Gertrude M. Cox Scholarship	Feb. 23, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Eloise E. Kaizar</b> <a href="mailto:ekaizar@stat.osu.edu">ekaizar@stat.osu.edu</a>
ASA Edward C. Bryant Scholarship	March 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Pushpal Mukhopadhyay</b> <a href="mailto:pushpal.mukhopadhyay@sas.com">pushpal.mukhopadhyay@sas.com</a>
ASA Excellence in Statistical Reporting Award	March 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Alan R. Tupek</b> <a href="mailto:alan.tupek@gmail.com">alan.tupek@gmail.com</a>
ASA Fellows	March 1, 2017	Nominations accepted at <a href="http://www.amstat.org">www.amstat.org</a> beginning October 1, 2016	<b>Keith F. Rust</b> <a href="mailto:keithrust@westat.com">keithrust@westat.com</a>
ASA Mentoring Award	March 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Jessica M. Utts</b> <a href="mailto:jutts@uci.edu">jutts@uci.edu</a>
ASA Outstanding Statistical Application Award	March 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Jung-Ying Tzeng</b> <a href="mailto:jytzeng@stat.ncsu.edu">jytzeng@stat.ncsu.edu</a>
Statistical Partnerships among Academe, Industry, and Government (SPAIG) Award	March 1, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Pam McGovern</b> <a href="mailto:Pam.McGovern@nass.usda.gov">Pam.McGovern@nass.usda.gov</a> or <b>Kelly Zou</b> <a href="mailto:Kelly.Zou@pfizer.com">Kelly.Zou@pfizer.com</a>
ASA Founders Award	March 15, 2017	<a href="mailto:awards@amstat.org">awards@amstat.org</a>	<b>Jessica M. Utts</b> <a href="mailto:jutts@uci.edu">jutts@uci.edu</a>

# sectionnews

## Biometrics

*Edited by Sheng Luo, Biometrics Section Publications Officer*

The Biometrics Section is seeking applications for the 2017 David P. Byar Young Investigator Award from early-stage investigators planning to submit an abstract for the 2017 Joint Statistical Meetings (JSM) in Baltimore, Maryland. This annual award is given for the best paper to be presented at JSM. The winner will receive \$2,000. All materials must be submitted electronically on or before December 1. View the details at <http://bit.ly/2daxxAl>.

The ASA Biometrics Section also invites applications for funding to support projects developing innovative outreach projects focused on enhancing awareness of biostatistics among quantitatively talented U.S. students. Of particular interest are projects that will encourage students to pursue advanced training in biostatistics.

The section anticipates funding up to three projects, with total funding of \$3,000–\$5,000 per project. The project timelines would be from 1.5–2 years. All investigators are encouraged to apply. Award recipients must be both ASA and Biometrics Section members before project initiation.

A three-page application is due by December 12 and should be in the following format:

- Title
- Objectives and Specific Aims
- Background
- Significance, and/or Rationale
- Design and Methods
- Deliverables/Products
- Budget

Supplies, domestic travel (when necessary to carry out the project), professional expertise (e.g., instructional designer or webmaster), and cost

of computer time are allowable expenditures. Secretarial/administrative personnel, tuition, foreign travel, and honoraria and travel expenses for visiting lecturers to the investigator's home institution are not allowable expenditures.

A project period with a start date no earlier than January 1, 2017, and an end date no later than December 31, 2018, also should be specified.

Applications should be submitted electronically to the Strategic Initiatives Subcommittee chair, Page Moore, at [Pmoore@uams.edu](mailto:Pmoore@uams.edu). All investigators will be expected to submit a brief report at the conclusion of the project to the subcommittee chair. Questions may be addressed to Moore or Tanya Garcia at [Tpgarcia@sph.tamhsc.edu](mailto:Tpgarcia@sph.tamhsc.edu). ■

## Quality and Productivity

Newly elected section officers beginning in 2017 are Erin Tanenbaum of NORC at the University of Chicago as chair-elect and Zhanpan Zhang of General Electric Global Research as program chair-elect.

Nominations for 2018 chair-elect and program chair-elect are being sought now. The section is also seeking nominations for a publications chair-designate. If you are interested in these positions, reach out to Ming Li at [mli@alumni.iastate.edu](mailto:mli@alumni.iastate.edu).

## Student Winners

The section's student scholarship program offers support to attend the Joint Statistical Meetings. This year, the section awarded four scholarships to the following students to attend JSM 2016 in Chicago, Illinois:

- Wannes Akkermans, University of Leuven, Belgium
- Po-Hsu Allen Chen, The Ohio State University
- Yiqing Tian, North Carolina State University
- Cheng You, Penn State



Recipients were recognized at the joint Q&P/SPES mixer during JSM.

There will be three travel awards of \$400 each for students enrolled in a graduate program with a concentration in applied statistics and/or quality management to attend JSM 2017 in Baltimore, Maryland, from July 29 to August 3.

Student applicants must show a demonstrated interest in quality applications as evidenced by course work, research topic, or prior work experience. Applicants either presenting a paper or participating in a poster session will receive extra consideration.

Applications will be accepted December 1, 2016, to February 1, 2017. Complete information about the award and how to apply is posted at <http://bit.ly/2dWt610> ■

## Medical Devices and Diagnostics

The Medical Devices and Diagnostics (MDD) Section will sponsor a student paper competition for the Joint Statistical Meetings (JSM) in Baltimore. A manuscript suitable for journal submission is required to enter. The first-place winner will receive \$500; the second-place winner will receive \$300.

To be eligible, applicants must be a student (undergraduate, master's, or PhD [full or part time]) on or after September 1, or be within two years of graduation if the submitted work was initiated while a student. The applicant must be first author on the paper, and the adviser (or other coauthor) must write a letter stating that the applicant had primary responsibility for the research and write-up. The applicant also must be a member of MDD.

### To Apply

Applications are due December 15. Send an e-mail to [MDDpaperJSM2016@gmail.com](mailto:MDDpaperJSM2016@gmail.com) with the following attachments (in PDF format):

- A curriculum vita

- A letter from the adviser (or other coauthor) verifying the student status of the applicant and briefly describing the applicant's role in the research and writing of the paper
- A cover letter describing the contributions of the paper to MDD
  - The paper—including all tables, figures, and appendices—as a single PDF file

Papers will be reviewed by an MDD committee. Criteria for selection will include novelty in theory/methods/applications, significance and potential impact of the research, and clarity of writing and presentation. Decisions of the committee are final.

Applicants will be notified of the committee decision by January 30, 2017. The winners (including those receiving honorable mention) must submit abstracts and register for JSM by February of 2017 through the official JSM abstract submission system.

To receive the award, the winners must register for the conference and present a talk under the auspices of the MDD on the topic of the winning paper. Those who are not selected as winners are encouraged to submit a contributed abstract to JSM 2017.

Students may submit papers to no more than two sections and may accept only one section's award. Students must inform both sections applied to when he or she wins and accepts an award, thereby removing the student from the award competition for the second section.

### Prizes

MDD anticipates awarding a \$500 award to the first-place winner and a \$300 award to the second-place winner. The best paper winner and honorable mention winners will be presented with a certificate at the MDD section meeting during JSM.

For information about MDD, visit <http://bit.ly/2dNLngp>. For more information about JSM, visit [ww2.amstat.org/meetings/jsm/2017](http://ww2.amstat.org/meetings/jsm/2017). ■



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.

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

Also, look for job ads on the ASA website at [www.amstat.org/jobweb](http://www.amstat.org/jobweb).

## Arizona

■ Arizona State University is accepting applications for a faculty position in statistics. For more information, visit <http://bit.ly/2exYVfE>. EOE.

■ Arizona State University seeks a statistician for a tenured or tenure-track assistant or associate professor position in the School of Mathematical and Natural Sciences. Successful candidates will develop productive research programs, mentor/teach diverse students

in our undergraduate and developing graduate programs, provide service to university/profession. Application deadline: December 9, 2016; if not filled, every Friday thereafter until search closed. Visit <https://newcollege.asu.edu/jobs> for complete advertisement. EOE. See the complete non-discrimination statement at: <https://www.asu.edu/titleIX>.

## California

■ Department of statistics & applied probability, University of California, Santa Barbara invites applications for a tenure track assistant professor position in statistics; starting 7/1/2017. Qualifications: research/teaching excellence; PhD in statistics, biostatistics or related fields. Candidates who can contribute in the diversity of excellence of the academic community through research, teaching and service are particularly encouraged to apply. Additional information at: <http://bit.ly/2dqT3rs>. EOE.

■ The department of statistics and biostatistics at the California State University, East Bay seeks candidates

for an assistant professor position on the tenure track. The areas of application we seek are: data science, statistical learning, predictive modeling, and statistics education. Applicants must have a PhD or equivalent degree. Apply online at: <http://bit.ly/2epF4jk>. Department information at <http://bit.ly/2eaumia>. EOE.

■ Tenure-track assistant professor in statistics starting 9/2017. Cal Poly Pomona, math & stat dept. Require PhD in statistics. Consider any area of statistics, but expertise in nonparametrics, time series analysis, spatial statistics, high dimensional analysis, bioinformatics, and statistical consulting is preferred. Deadline: December 2, 2016. Submit: CV, teaching philosophy, research statement, 3 reference letters. Send to [mathstatsearch@cpp.edu](mailto:mathstatsearch@cpp.edu). For application instructions, visit our department website. EOE.

## Florida

■ The department of statistics at Florida State University invites applications for a tenure track position



The Department of Biostatistics at The University of Iowa College of Public Health invites applications for two open tenure-track faculty positions at the rank of Assistant Professor. Exceptional applicants will also be considered at the rank of tenured or tenure-track Associate/Full Professor. The Department is looking to hire faculty who will either enhance or complement areas of existing methodological research expertise. However, qualified candidates with all areas of expertise will be given full consideration.

The positions require a PhD or equivalent in Biostatistics, Statistics, or a related area.

See <http://jobs.uiowa.edu/> (requisition # 69445) for the complete position description and electronic application information.

EOE: The University of Iowa is an Equal Opportunity Employer. The University of Iowa is an equal opportunity affirmative action employer. All qualified applicants are encouraged to apply and will receive consideration for employment free from discrimination on the basis of race, creed, color, national origin, age, sex, pregnancy, sexual orientation, gender identity, genetic information, religion, associational preference, status as a qualified individual with a disability, or status as a protected veteran.



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

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

The Department of Biostatistics has 23 faculty members and 40 masters and doctoral level research analysts and 13 postdoctoral fellows. Faculty members are actively involved in collaborative and methodological research in such diverse areas as clinical trial design, Bayesian methodology, cancer screening and early detection, bioinformatics, genomic pathway analysis, integrative modeling of multiple types of complex data including high-dimensional genomic data, functional data analysis, image data analysis, survival analysis, statistical genetics, and behavioral/social statistics. Faculty members also have opportunities in the affiliated biostatistics doctoral programs at the University of Texas, Texas A&M University, and Rice University. The department is supported by strong resources, which includes an active quantitative research computing team with specialties in database design, web-based clinical trial support, scientific programming, and software engineering. Information about the department and programs offered can be found at <http://www3.mdanderson.org/depts/biostatistics/>. Further questions regarding the position may be directed to Veera Baladandayuthapani ([veera@mdanderson.org](mailto:veera@mdanderson.org); [subject:faculty\\_position\\_2016-2017](mailto:subject:faculty_position_2016-2017)).

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

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

in biostatistics starting August 2017. A PhD in statistics, biostatistics, or a related field is required. Please apply at <http://jobs.fsu.edu> (Job ID 40812). Priority will be given to completed applications received by December 1. Review of applications will begin November 15 and continue until the position is filled. EOE.

## Georgia

■ Tenure-track assistant professorship, department of statistics, University of Georgia, starting August 2017. Requires PhD in statistics or related discipline by 8/1/2017. To apply, visit <http://bit.ly/2eogU87>. Applications received by 1/2/2017, are assured consideration. EOE.

## Idaho

■ Idaho State University, department of mathematics & statistics, Pocatello, Idaho is seeking an assistant professor of statistics. For a detailed job description and further information about the university and the department, please visit us at [www.isu.edu](http://www.isu.edu) or [www.isu.edu/math](http://www.isu.edu/math); phone (208) 282-3350. Email: [stathire@isu.edu](mailto:stathire@isu.edu). EOE.

## Kansas

■ The department of biostatistics at the University of Kansas Medical Center is recruiting an open track and open rank faculty member who will be responsible for collaborative research, independent research, teaching and mentoring. The department consists of 13 PhD statisticians, two teaching associates, 12 staff members and over 50 graduate students. To apply go to <http://bit.ly/2e4Ucmu>. EOE.

■ Department of mathematics, University of Kansas invites applications for a tenure-track faculty position in probability and/or statistics expected to begin as early as August 18, 2017. For a complete announcement and to apply online, go to <http://bit.ly/1PjS6hP> and click "Search Faculty Jobs," and search key word: "PROB STAT." Initial review of applications will begin November 1, 2016. KU is an EO/AAE, full policy <http://bit.ly/2ekRYB6>.

## Massachusetts

■ Tenure track assistant/associate professor, mathematical sciences. Bentley University, a private business university outside Boston, invites applications for

two full time positions in applied statistics or related fields for fall 2017. Bentley offers degrees in mathematical sciences, actuarial science, MS in business analytics and a business PhD. Doctoral degree required in applied statistics or a related field by fall 2017. Interested applicants visit: <http://bit.ly/2enm34D>. EOE.

■ Under the direction of the group statistician/director, the assistant director for operations guides and manages all operational aspects of the center. Major areas of managerial responsibility include oversight of statisticians, database administrators, and administrative support staff, and serving as liaison/advisor to managers. The assistant director may serve as the lead statistician for PRECOG. The assistant director also has scientific committee leadership responsibilities and serves as a therapeutic statistician. Apply here: <http://bit.ly/2exXU7s> AA/EOE.

## Michigan

■ The Survey Research Center <http://bit.ly/2ensc0u> in the Institute for Social Research at the University of Michigan invites applications from outstanding candidates for executive director-MFSRDC with doctorate in social

## Tenure/Tenured Track ORIE Faculty – Cornell University, Ithaca, NY

*Cornell is a community of scholars, known for intellectual rigor and engaged in deep and broad research, teaching tomorrow's thought leaders to think otherwise, care for others, and create and disseminate knowledge with a public purpose.*

Cornell University's School of Operations Research and Information Engineering (ORIE) seeks to fill multiple tenured/tenure-track faculty positions for its Ithaca campus. Applicants with research interests in e-commerce- and healthcare-related areas of supply chain logistics, and in integer programming, will receive primary consideration, although we welcome strong applicants from all research areas represented within ORIE. One of the faculty positions may include responsibilities within Cornell's Systems Engineering Program.

Requisite is a strong interest in the broad mission of the School, exceptional potential for leadership in research and education, an ability and willingness to teach at all levels of the program, and a PhD in operations research, mathematics, statistics, or a related field by the start of the appointment. Salary will be appropriate to qualifications and engineering school norms.

Cornell ORIE is a diverse group of high-quality researchers and educators interested in probability, optimization, statistics, simulation, and a wide array of applications such as e-commerce, supply chains, scheduling, manufacturing, transportation systems, health care, financial engineering, service systems and network science. We value mathematical and technical depth and innovation, and experience with applications and practice. Ideal candidates will have correspondingly broad training and interests. ORIE participates in particular in Cornell's interdisciplinary Systems Engineering Program.

Please apply online at <https://academicjobsonline.org/ajo/jobs/7553> with a cover letter, CV, statements of teaching and research interests, sample publications, at least three reference letters and, for junior applicants, a doctoral transcript. Applicants attending the INFORMS annual meeting are strongly encouraged to submit all application materials by October 30, 2016. All applications completed by November 15, 2016 will receive full consideration, but candidates are urged to submit all required material as soon as possible. Applications will be accepted until the positions are filled.

ORIE and the College of Engineering at Cornell embrace diversity and seek candidates who can contribute to a welcoming climate for students of all races and genders. Cornell University seeks to meet the needs of dual career couples, has a Dual Career program, and is a member of the Upstate New York Higher Education Recruitment Consortium to assist with dual career searches. Visit <http://www.unyherc.org/home/> to see positions available in higher education in the upstate New York area. Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities. We strongly encourage qualified women and minority candidates to apply.

Find us online at <http://hr.cornell.edu/jobs> or [Facebook.com/CornellCareers](https://www.facebook.com/CornellCareers)

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



*Diversity and inclusion have been and continue to be a part of our heritage. Cornell University is a recognized EEO/AA employer and educator.*

science area. For details about this part-time position, see: <http://bit.ly/2dRRGy3>. Applicants should submit a cover letter, CV, names of references, and one or two publications. Documents should be sent to [srcsearches@umich.edu](mailto:srcsearches@umich.edu). Reference position #131169. EOE.

## Missouri

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

## New Mexico

■ Group leader (R&D Manager 4), Job IRC51692. Work for LANL as a member of the computer, computational, and statistical sciences division leadership team, providing technical leadership and management for the statistical sciences group, CCS-6 in Los Alamos, NM. CCS-6 seeks an individual with in-depth knowledge of advanced statistical methods and relevant experience to serve as group leader. To apply visit [careers.lanl.gov](http://careers.lanl.gov) EOE.

## North Carolina

■ The department of biostatistical sciences (DBS), Wake Forest School of Medicine, Winston-Salem, NC, invites applications for tenure-track assistant or associate professor positions. A vibrant unit with 24 faculty, DBS has an extramural funding record including geriatrics, cardiovascular disease, diabetes, women's health, population genetics, and cancer control. PhD in biostatistics, statistics, informatics, or related field with experience collaborating with medical or public health professionals preferred. <http://bit.ly/2eohsuH>. EOE.

## Ohio

■ The department of statistics at The Ohio State University searches for three tenured/

## Our Quantitative Sciences team is looking for Master's- and PhD-level biostatisticians and epidemiologists to answer novel research questions and make an immediate impact on cancer patients.

We're looking for candidates with a track record of applying quantitative methodologies to real-world healthcare research problems. Applicants should love working with data and have excellent communication skills, deep attention to detail, and the flexibility to adapt to complex challenges.

### ABOUT FLATIRON

- Oncology-focused tech company with HQ in NYC
- 300+ employees
- Strong salary, equity packages, full benefits, lunch, snacks, flexible hours & PTO

### OUR MISSION

- Serve cancer patients and our partners by improving treatment and accelerating research

### OUR VISION

- Enhance delivery of cancer care, support large-scale research on clinical quality and outcomes, increase accessibility of key oncology data points to providers and researchers

### WHAT WE DO

- Transform real-world clinical data from cancer centers' electronic health record software into functional datasets for cancer research
- Apply quantitative methods to rapidly analyze and visualize cancer care data for cancer clinics, academic institutions, and life sciences companies
- Identify valuable oncology research questions, design and implement robust statistical analyses, and disseminate results in peer-reviewed publications and conference presentations

### OUR TEAM

- Includes biostatisticians, epidemiologists, oncologists, clinical and outcomes researchers, medical informaticists, software engineers, database architects, and security & privacy experts

### RECENT ANNOUNCEMENTS

- Collaborations with FDA, National Comprehensive Cancer Network, and Foundation Medicine
- \$130m Series B funding, led by Google Ventures
- \$175m Series C, led by Roche

FLATIRON

### APPLY TODAY:

Please visit [flatiron.com/careers](http://flatiron.com/careers) and select Quantitative Sciences

## ASSISTANT PROFESSOR, BIOSTATISTICS

The University of Nevada, Reno, School of Community Health Sciences is seeking two candidates for a nine-month, tenured track position in Biostatistics at the rank of Assistant Professor. The School offers MPH in Epidemiology, Social-Behavioral Health, and Health Policy and Administration and BS in Community Health Sciences, with a plan to develop MS and PhD. in Biostatistics. Research and teaching interest should be in the area of biostatistics. Preference will be given to applicants whose research includes a) health informatics and data science or b) Bayesian statistics, mixed models, and temporal and spatial analysis.

The successful applicant is expected to engage in both independent and collaborative research projects, teach successfully in the graduate and undergraduate programs, provide statistical consultative support to other health researchers in the university system and engage in the development of the new School of Public Health.

To apply, please visit: <https://www.unrsearch.com/postings/21758>.

The University of Nevada, Reno is the State of Nevada's land grant and historic flagship institution of higher education and is one of eight institutions of higher education governed by the Nevada System of Higher Education. With a growing and increasingly diverse student enrollment of approximately 20,000 including over 2,800 graduate students, the University provides a comprehensive selection of degree programs at the undergraduate, graduate and doctoral levels. The University is currently classified (Carnegie) as "Research University/High" which places us among approximately the top 200 colleges and universities in the United States. Located in the picturesque Truckee Meadows at the base of the Sierra Nevada, the University of Nevada, is located 45 minutes from Lake Tahoe and within four hours from San Francisco and the Napa-Sonoma wine country.

EEO/AA Women, under-represented groups, individuals with disabilities, and veterans are encouraged to apply.



**UNIVERSITY OF WASHINGTON  
DEPARTMENT OF BIOSTATISTICS**

wishes to fill two full-time (100% FTE) tenure track faculty positions at the Assistant Professor level. Candidates who will enhance the Department's expertise in methodological research and biomedical applications are strongly encouraged to apply. The Department of Biostatistics currently has more than 40 regular and research-track faculty, as well as 30 affiliate and adjunct faculty members.

Ph.D. required in Biostatistics, Statistics or related field. Duties include graduate and undergraduate teaching, methodological research, and biomedical collaborative research. Submit a letter of interest, curriculum vitae, teaching and research statements, and four signed original letters of reference by **December 15, 2016** to:

Biostatistics Faculty Search  
bsearch@uw.edu

For information on the Department of Biostatistics, please visit <http://www.biostat.washington.edu>. Applications will be accepted until positions are filled.

The University of Washington is an affirmative action, equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, gender expression, national origin, age, protected veteran or disabled status, or genetic information.

tenure-track faculty: one open-rank position with expertise in statistics and machine learning; two assistant professors with expertise in predictive analytics and environmental analytics, respectively. PhD in statistics (or related area) expected by the start of autumn semester 2017; apply electronically at <http://bit.ly/2dt0mxF>. Review process will begin November 1. EEO/AA.

**Pennsylvania**

■ The Wharton Department of Statistics, University of Pennsylvania, is seeking full-time, tenure-track faculty at any level: assistant, associate, or full professor, appointment beginning July 2017. Applicants should show outstanding capacity in research and teaching. Applicants must have a PhD (expected completion by June 30, 2018 is acceptable) from an accredited institution. Please visit our website to apply: <http://wharton.edu/2e0fBWo>. Questions can be sent to [statistics.recruit@wharton.upenn.edu](mailto:statistics.recruit@wharton.upenn.edu). EOE.

■ The University of Pittsburgh is seeking applications for two lecturers in the department of statistics beginning September



**UNC**  
GILLINGS SCHOOL OF  
GLOBAL PUBLIC HEALTH

**FACULTY POSITIONS IN STATISTICAL GENETICS/  
GENOMICS/COMPUTATIONAL BIOLOGY**

The Departments of Biostatistics and Genetics at The University of North Carolina at Chapel Hill are seeking applications for multiple tenure-track or tenured positions in statistical genetics/genomics/computational biology, starting in the fall of 2017. Primary appointments will be in the Department of Biostatistics in the Gillings School of Global Public Health, with one of the appointments being joint in the Department of Genetics in the School of Medicine. Appointments may be at the Assistant, Associate or Full Professor level, depending on qualifications. At least one position will be at the Assistant Professor rank. A doctoral degree in Biostatistics, Statistics or equivalent is required. Applicants should have broad research and teaching interests, the potential to direct PhD-level research, and the ability to engage in collaborative research with other faculty members at the University. The successful candidate will join a vibrant group of researchers in Biostatistics, Genetics and elsewhere at UNC. The University of North Carolina is among the nation's top public research universities, with dynamic

programs in biostatistics, genetics, genomics, bioinformatics, biology, epidemiology, medicine, pharmacogenomics, statistics, and toxicology. In addition, UNC has numerous externally funded projects that provide an excellent environment for interdisciplinary research. Review of applications will start in December. The positions will remain open until filled.

To apply, use the electronic submission website at <http://unc.peopleadmin.com/postings/105847> and upload PDF versions of your CV, cover letter, and research and teaching statements. Candidates must also arrange for four letters of recommendation to arrive via email at [bennett@bios.unc.edu](mailto:bennett@bios.unc.edu) addressed to:

**Faculty Search Committee**

c/o Vera Bennett  
Department of Biostatistics  
CB #7420, McGavran-Greenberg Hall  
University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-7420

*The University of North Carolina at Chapel Hill is an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender, gender expression, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, or status as a protected veteran.*

# Master of Science in Biostatistics: Theory and Methods at Mount Sinai



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- A curriculum emphasizing strong quantitative training, critical thinking skills, and practical strategies for addressing complex challenges of novel, clinical research
- A stimulating environment in which students apply statistical tools to real data and collaborate with clinical and translational scientists

The Theory and Methods track in the MS in Biostatistics curriculum consists of at least 34 credits, to be completed in one year, of which 31 are core credits and at least 3 are elective credits.

## **Sample Theory and Methods Track Curriculum**

FALL TERM	SPRING I TERM	SPRING II TERM
Introduction to Advanced Biostatistics	Applied Linear Models I	Analysis of Longitudinal Data
Fundamentals of Epidemiology	Analysis of Categorical Data	Survival Analysis
Probability and Inference I	Probability and Inference II	Drug Development Process (Elective)
Introduction to R Programming	Applied Biostatistics in Clinical Trials	Race and Causal Inference Seminar (Elective)

**Priority application deadline:** January 15, 2017

**Final application deadline:** February 15, 2017

**For more information, go to:** [www.icaohn.mssm.edu/msbiostat](http://www.icaohn.mssm.edu/msbiostat)

**Inquiries:** [MSBiostat@mssm.edu](mailto:MSBiostat@mssm.edu)



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We are currently recruiting for the following positions:

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

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

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

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

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

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

[www.westat.com](http://www.westat.com)

2017. Positions are outside the tenure stream with the expectation of rolling multiyear contract renewals for successful lecturers. Candidates must have a Ph.D. in statistics, biostatistics or related field and a demonstrated talent for teaching undergraduate statistics courses and mentoring students. Position details are available at <http://stat.pitt.edu/>. EEO/AA/M/F/Vets/Disabled.

### Texas

■ The department of mathematical sciences at UTEP seeks a data scientist with expertise in statistical modeling for big data and/or high performance data analytics, for a tenure-track assistant professor position. Successful candidates will develop productive research programs, mentor and teach undergraduate and graduate students, and direct computational science PhD dissertations. View full ad and apply at <http://math.utep.edu/jobs/#Applied>. EOE.

■ The Rawls College of Business at Texas Tech University invites applications for an assistant professor of practice in business statistics beginning August 2017. For this position, we seek someone who can teach a variety of statistics courses to fill

### Department of Statistics | Columbia University

#### LECTURER IN DISCIPLINE POSITIONS STARTING SPRING 2017

The Department of Statistics invites applications for positions at the rank of Lecturer in Discipline to begin January 1, 2017. These are full-time appointments with multi-year renewals contingent on successful reviews. These positions are targeted to participate in the Department's burgeoning MA Programs.

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

The department currently consists of 30 faculty members, 45 PhD students, and over 200 MA students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: <http://www.stat.columbia.edu>

All applications must be submitted through Columbia's online Recruitment of Academic Personnel System (RAPS) and must include the following materials: cover letter, curriculum vitae, statement of teaching philosophy, research statement, evidence of teaching effectiveness, one writing sample or publication, and the names of 3 references into the system. Applicants also should arrange for three letters of recommendation to be uploaded on their behalf. For more information and to apply, please go to: [academicjobs.columbia.edu/applicants/Central?quickFind=63456](http://academicjobs.columbia.edu/applicants/Central?quickFind=63456)

Inquiries may be made to [dk@stat.columbia.edu](mailto:dk@stat.columbia.edu)

Review of applications begins on December 1, 2016 and will continue until the positions are filled.

Columbia University is an Equal Opportunity/Affirmative Action employer.

teaching needs in our MBA program and M.S.-data science program. Visit <http://bit.ly/1xNeoe> to view complete advertisement, choose search openings, and enter requisition number 8144BR. EOE.

■ The division of biostatistics and epidemiology in the department of biomedical sciences, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center El Paso, seeks highly qualified applicants for two tenure-track faculty positions, one assistant professor in biostatistics/epidemiology and one assistant professor in bioinformatics/ biostatistics. A PhD in biostatistics, epidemiology, bioinformatics or related field is required. Interested candidates should apply online at <http://careers.texasstate.edu>. EOE.

## Virginia

■ The department of mathematics and statistics at James Madison University invites applications for one or more tenure track faculty positions in statistics. To apply or for additional information: <http://bit.ly/2eKVOQG>. Review of applications begins October 28, 2016. Apply by that date to guarantee full consideration. EOE.

■ Assistant professor, quantitative psychology — The UVa arts & sciences department of psychology invites applicants for a tenure-track faculty position in quantitative psychology at the rank of

assistant professor. PhD required in psychology or a computational/statistical/mathematical field. To apply candidates must submit a candidate profile through Jobs@UVa (<https://jobs.virginia.edu>), search on posting number 0619516. For questions regarding the application process: Rich Haverstrom, [rkh6j@virginia.edu](mailto:rkh6j@virginia.edu). EOE.

## Washington

■ Department of mathematics and statistics at Washington State University, Pullman seeks tenure track assistant professor in data analytics and statistics beginning August 2017. Requires PhD in data science or statistics, mathematics with statistics emphasis, or data analytics. Must develop a well-funded research program. Prefer postdoctoral experience. Teach undergraduate, graduate courses in data analytics, statistics. Apply online, cover letter, CV, references(3). Complete details at [www.wsujobs.com](http://www.wsujobs.com) EEO/AA.

■ Department of mathematics and statistics at Washington State University, Pullman seeks tenure track assistant professor in statistics by August 2017. Requires PhD in statistics, mathematics with statistics emphasis, or data analytics. Must develop a well-funded research program. Prefer postdoctoral experience. Requires teaching undergraduate, graduate level courses in statistics, data analytics. Apply online with cover letter CV,

names of 3 references. Complete details [www.wsujobs.com](http://www.wsujobs.com) EEO/AA.

## Nationwide

■ RAND Corporation is seeking PhD statisticians for exciting opportunities to collaborate on multidisciplinary public policy research projects. Openings exist for recent graduates and experienced statisticians. See our ad in the November *Amstat News* for details or go to [www.rand.org/statistics](http://www.rand.org/statistics). Applications received by December 15, 2016, will receive priority. Applications must be submitted online following the instructions at [www.rand.org/jobs/id4671](http://www.rand.org/jobs/id4671). EOE.

## International Ontario

■ The department of statistics and actuarial science, University of Waterloo invites applications for 1–2 tenure-track or tenured positions in actuarial science. PhD in area of actuarial science or mathematical finance; research in actuarial science or related disciplines. Apply through [www.mathjobs.org/jobs](http://www.mathjobs.org/jobs). Include cover letter, CV, research/teaching statements, up to three reprints/reprints/preprints and three reference letters. Full advertisement <http://bit.ly/1Ka1zTX>. Closing: December 1, 2016. AA/EOE.

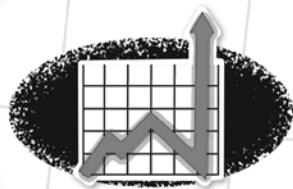
■ The department of statistics and actuarial science, University of Waterloo invites applications for 3 or more tenure-track or tenured position in statistics or biostatistics. PhD in area of statistics, biostatistics or data science required. Apply through [www.mathjobs.org/jobs](http://www.mathjobs.org/jobs). Include cover letter, CV, research/teaching statements, up to three reprints/preprints and three reference letters. Full advertisement <http://bit.ly/1Ka1zTX> AA/EOE. ■

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Icahn School of Medicine.....p. 44  
The University of Iowa.....p. 40  
The University of North Carolina.....p. 43  
University of Nevada, Reno.....p. 42  
University of Washington.....p. 43  
U.S. Census Bureau.....p. 47  
Westat.....p. 45

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In July, we asked our followers what animal a mascot for statisticians would be. Here is what a few of our members shared:



**Ali Shoaib** Ladybird, because it predicts the harshness of the winter 6 months in advance. No one knows why. But possibly because it is a very good statistician.

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**Tahmidul Islam** Owl...Always skeptical!

**Tim Young** The raven. "Logic and puzzle-solving come naturally to highly intelligent scavenger." Sounds like a good description to me!



**Jose Miguel Laborde** A Camel! Its bump looks like a density function. The one that has 2 of them will look like a mixture of Gaussians.



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A cat! A statcat!! We have already claimed it for our own but are happy to share.



# Statistics

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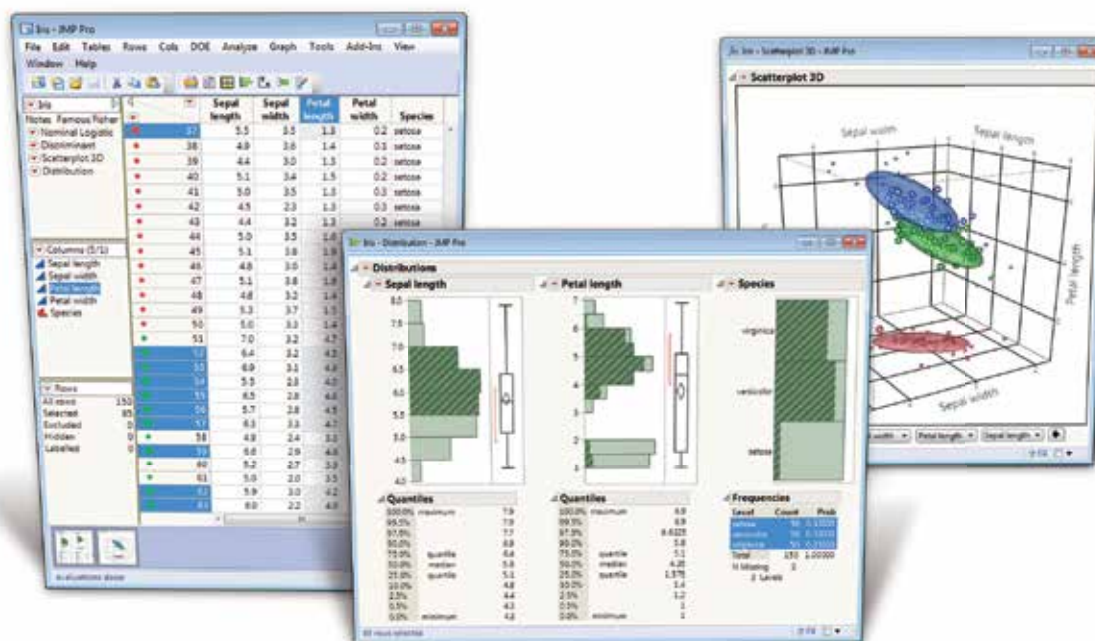
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