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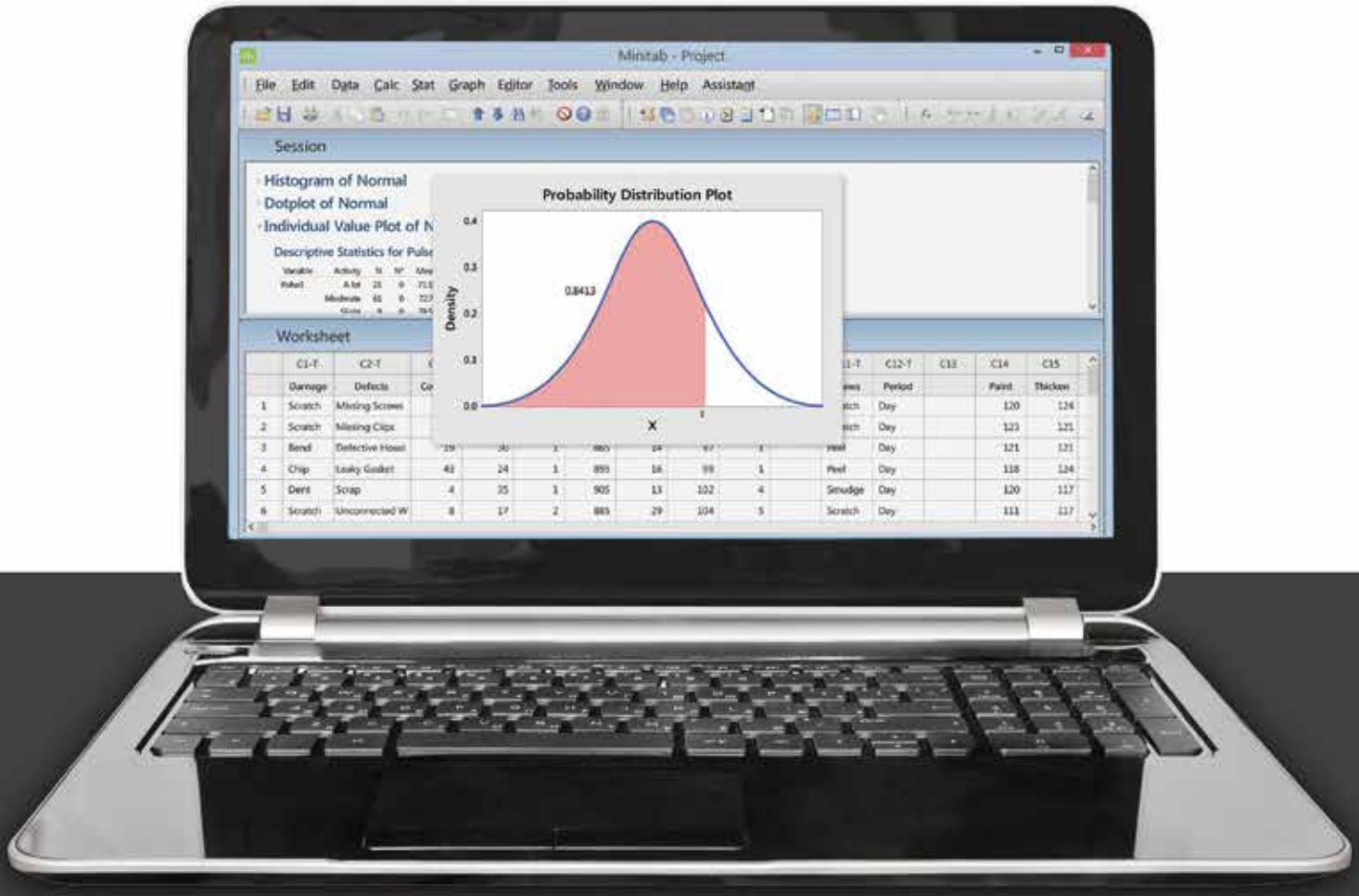

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DECEMBER 2017 • ISSUE #486

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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.

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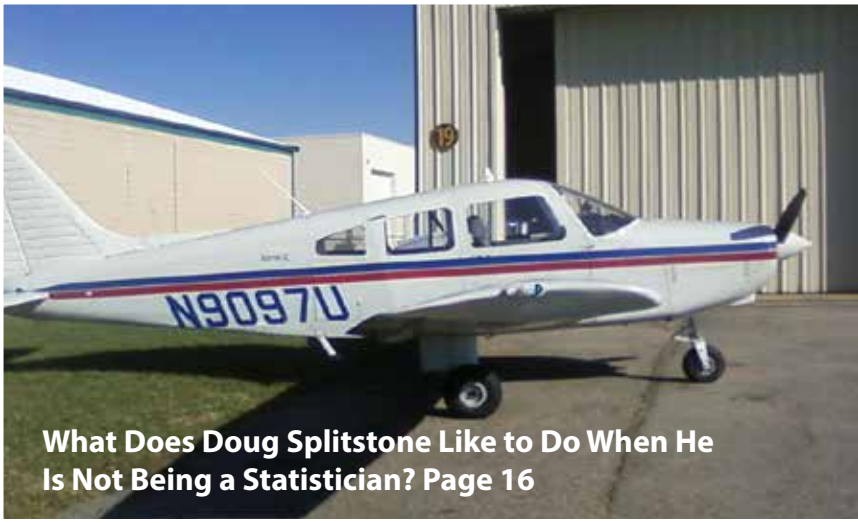

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16 **PASTIMES OF STATISTICIANS**
What Does Doug Splitstone Like to Do When He Is Not Being a Statistician?

This column focuses on what statisticians do when they are not being statisticians. If you would like to share your pastime with readers, please email Megan Murphy, *Amstat News* managing editor, at *megan@amstat.org.*

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How to Write an Effective Cover Letter and Résumé

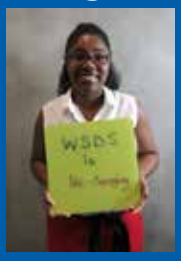
STAT*tr@k* is a column in *Amstat News* and a website geared toward people who are in a statistics program, recently graduated from a statistics program, or recently entered the job world. To read more articles like this one, visit the website at *http://stattrak.amstat.org*. If you have suggestions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

We Want Your Feedback!

Tell Us! How Are We Doing?

We believe it's important to check in from time to time to see how we're doing, where we're excelling, and what areas need improvement. We invite you to provide feedback about your experience using the ASA website, *www.amstat.org*. Participation is voluntary and anonymous, and the survey should take you no longer than two minutes. Please visit *www.surveymonkey.com/r/BQKTBF2* to participate.

Tag Yourself!



Throughout the Women in Statistics and Data Science Conference (WSDS), we asked attendees to describe in a word or two—or 12—what WSDS means to them. Visit the ASA's Facebook page at *https://goo.gl/gMvK4j* to view all the photos. Take a look, and please tag yourself!

Join Us!

Join us in Charleston for the International Conference on Health Policy Statistics: Registration open now! Read more in the *Amstat News* December issue online at *http://magazine.amstat.org*.

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Goofs, Gratitude, Headway, and HEROES

Barry D. Nussbaum

As a native New Yorker, I sometimes think of Ed Koch, the former three-term mayor who would stand at street corners and ask in his classic Bronx accent, "How'm I doin'?" I wonder if any of today's politicians would be so bold as to ask that. But here, in my last President's Corner, I want to answer how we are doing.

I suggested three initiatives. The communications initiative centered on my oft-repeated mantra, "It's not what we said, it's not what they heard, it's what they say they heard." We teamed up with the Stats + Stories group at Miami University. Started in 2013, this is a collaboration between statisticians and journalists producing podcasts that give the statistics behind the stories and the stories behind the statistics. With the new ASA assistance, a quality solution for having guests participate remotely via Skype now exists. Further, the programming has been augmented with five-minute episodes called Stats + [short] Stories. This partnership will continue affording ASA members the opportunity to both be guests and suggest topics of interest.

Our youth initiative has the goal of presenting interesting subjects using statistics to middle-school youngsters. The aim is to let these youngsters have fun while learning about statistics. This is the ASA's counterpart to the Museum of Mathematics, but will be a virtual space called the House of Statistics. Game-based learning, videos, and educational cartoons developed by our collaborators at Laber Labs will be available in the House of Statistics. There will be opportunities for learners of all ages to engage in data challenges.

In addition to housing valuable educational resources and assisting career exploration, the House of Statistics will be a resource for ASA members engaging in outreach.

The House of Statistics will also host virtual sessions with ASA members as they share their passion for statistics and data science. We anticipate the "open house" will be announced in early spring 2018.

David Morganstein engages the fastest-growing segment of the statistics community: the Asian statistician.

As you can see, thanks to ASA Director of Strategic Initiatives and Outreach Donna LaLonde's lead, both the communications initiative and the youth initiative are making great progress.

The third initiative involves engaging the fastest-growing segment of the statistics community: the Asian statistician. We launched a task force of members of the International Chinese Statistical Association, International Indian Statistical Association, and Korean International Statistical Society. This task force, under the excellent leadership of David Morganstein, examined some of the specific needs of this group. Among the concrete results was a career session at JSM devoted solely

to young Asian statisticians. While we worried about the attendance on early Sunday morning of JSM, it was a true joy that we had to contact the hotel staff to get extra chairs for the standing-room only attendees.

I am most concerned that these initiatives not be called Barry's initiatives, but rather regarded as important ASA programs. So, let's continue with these efforts.

Goofs

I have enjoyed writing my musings each month in this column. Naturally, I have wondered who reads it. The best way to find out is to say something erroneous. Somebody will tell you that you got it wrong. So, thanks to those of you who were kind enough to comment on my goofs. Some of the more memorable ones were Sastry Pantula, who suggested the frequently heard refrain "statistics is my worst subject" is not so frequently heard. Turns out Sastry and I had different populations. He had youth at a university, and I had, shall we say, an older set. I think this bodes well for our profession.

I also thank Tom Louis for pointing out that my remarks about significant digits were significantly flawed. I also appreciated David Mundel's thoughtful comments regarding the lead in gasoline/blood lead correlations.

But my favorite comments came from several of you, who noted my quote of Josiah Stamp regarding government analyses based on data provided by village watchmen who submit whatever they please. Turns out the quote was in Josiah Stamp's book, but he didn't say it. Further, it happened in India, not England. So, I guess I got the person, the country, and the continent wrong. I hope this still falls within the 3% margin of error.

Gratitude

In the past, I held office in a chapter, chaired a committee, chaired a section, and dealt with ASA staff. I still did not have a full idea of how all this works together to the benefit of our 19,000 members. Watching the committees, the councils, and the executive board, as well as interactions with other mathematical and statistical societies, really showed me what a well-oiled machine we have to promote our profession. I certainly want to thank all those devoted members who give their time and effort to serve on various groups, whether it is our geographic chapters, our subject-oriented sections, or our interactive committees. Also, special thanks to students who have contributed to the explosive growth of our student chapters. Of course, I am deeply indebted to the ASA officers who preceded me and showed me the ropes. I hope I may be half as helpful to my successors.

The professional staff of the ASA were a joy to work with. They do a heck of a lot more than just "minding the store." They run meetings, coordinate chapters, handle finances, distribute communications and publications, maintain an active policy voice, support continuing education, develop innovative programs, and maintain an online presence. They do all this collaboratively, with professionalism and enthusiasm. My sincere thanks go to Ron Wasserstein and his entire staff. Somehow, they always were there for me and never complained when I bothered them, which I am sure occurred at several occasions.

Heroes

The image of a statistician is one of a person sitting behind a desk manipulating numbers. Yet, the job is not always so sedentary. We do have members who go into harm's way. Bill Hunt spent time in Kuwait right after the Gulf War in 1991. Bill was checking air quality measurements while the fires were still raging, and, as he told me, "watch your step," as there were still up to 4 million land mines.

Holly Shulman made several trips to Puerto Rico to design a hospital-based surveillance system to record the effect of the Zika exposure to women giving birth. Eric Vance needed an armored police transport in Nigeria to give a distinguished guest lecture … better distinguished than extinguished. And Jana Asher's 10 years of work collecting human rights violation data brought her to countries including Iraq, East Timor, Sierra Leone, Uganda, and Zimbabwe. Not exactly the list of places a travel agent suggests.

Some responses indicate you became a statistician to provide needed analysis for crucial situations without directly being in danger. That's just fine with me. In fact, I want to end with a thought I gave in my address at the recent JSM. I think, many times, statisticians are the unheralded heroes. I have some personal experience. Two years ago, I lost my wife after an incredible 26-year battle with breast cancer. Her survival for so many years is a testament not only to the medical profession, but to the statisticians who develop clinical trials and are responsible for so many medical successes. Keep up the good work. You are all my heroes.

It has been an honor and privilege to have been your president.

Best wishes for a happy, healthy, prosperous, and productive new year.

Significantly forward,
Barry

Student Applications Wanted for ASA/ AAAS Mass Media Fellowship

Students, are you interested in journalism? Do you want an invaluable experience that also advances a statistical perspective? If so, apply for the AAAS Mass Media Fellowship. The selected fellow will spend 10 weeks with a media outlet next summer as the ASA-sponsored Mass Media Fellow (MMF).

"If the idea of turning the devilish trickiness of statistics into something the general public can enjoy is something that appeals to you, the fellowship is the place to be," says Nick Thieme, the ASA's inaugural MMF. "The AAAS Mass Media Program is a chance to reach out to hundreds of thousands of people and share with them knowledge they wouldn't otherwise have. It's a one-of-a-kind experience. If your time with the program is anything like mine, with no exaggeration, it will change your life!"

An undergraduate major in statistics at Carnegie Mellon University and then a graduate student in computer science at the University of Maryland, Thieme spent 10 weeks with *Slate* in its NYC and DC offices, publishing more than 20 pieces. He also wrote two engaging pieces for *This*IsStatistics, including "Stats in Action: 3 Data Journalism Skills I'll Take Back to Grad School."

Besides the impact of his time as a fellow, Nick commented, "The summer is also an incredibly fun time. I was nervous all summer long … but there was nothing quite like the joy that I felt during and at the end of the program."

Led by AAAS and supported by many organizations, the fellowship is a highly successful program designed to "enhance coverage of science-related issues in the media in order to improve public understanding and appreciation of science and technology." The program has supported more than 700 fellows in its more than 40-year history.

Applications will be accepted through January 15 on the AAAS website at *www.aaas.org/page/about-1.*

For more information, see *https://goo.gl/MNNTLm.*

Applications Sought for ASA Science Policy Fellowships

The ASA is accepting applications for its science policy fellowship, which will last for 1–2 years. The selected fellow will be based at the ASA headquarters in Alexandria, Virginia; however, they will spend the bulk of their time in Washington, DC, advocating for statistics and experiencing first-hand how federal science policy is formed.

Applications are due by December 31, but the ASA will consider high-quality applications until the position is filled.

The fellowship was created to elevate the profile of statistics in policymaking and advocate on behalf of the profession. Amy Nussbaum was the ASA's inaugural science policy fellow. She represented the ASA at meetings from the National Academies to Capitol Hill and introduced her own member of Congress to climate scientists. Among the many projects she worked on were the documents "Guidance on Statistical Evidence in Legislation" (*https://goo.gl/r9PKm7*) and "Recommendations to Funding Agencies for Supporting Reproducible Research" (*https://goo.gl/zL8xu8*).

For more information about this opportunity, see *ww2.amstat.org/policy/fellowship.cfm*. Questions about this opportunity and application requirements may be directed to ASA Director of Science Policy Steve Pierson at *pierson@amstat.org*. ■

MORE ONLINE
For more about Amy and her experience, visit *https://goo.gl/P73y5L, https://goo.gl/aYYoQX, https://goo.gl/EvXAvT,* and *https://goo.gl/AepuuY.*

2017 NESSIS Features Retrodictive Modeling, Shot Taxonomy, Randomness

Scott Evans and Mark Glickman

Panelists (from left): Dennis Lock – Miami Dolphins, Sandy Weil – Los Angeles Rams, Karim Kassam – Pittsburgh Steelers, and moderator Aaron Schatz – Football Outsiders

MORE ONLINE
Technical talk videos, presentation slides, photographs, and additional information about NESSIS can be found at *www.nessis.org*. Look for NESSIS VI in 2019!

The 2017 New England Symposium on Statistics in Sports (NESSIS) was held September 23 at the Harvard University Science Center. The symposium format was a mixture of invited talks, a poster session, and a panel discussion.

NESSIS was established by Mark Glickman and Scott Evans to enhance the communication and collaboration between statisticians and quantitative analysts connected with sports teams, sports media, and universities. The first NESSIS was held in 2007 with 110 attendees primarily from the New England area. Continued enthusiasm inspired NESSIS to be held biannually.

The 2017 NESSIS drew a diverse crowd of 245 registrants, including attendees from at least seven countries and 33 states.

NESSIS was highlighted by featured talks. First, David Firth of the University of Warwick and the Alan Turing Institute spoke about fair standings in soccer and other round-robin leagues through retrodictive modeling. The second featured talk was a presentation by Stephanie Kovalchik of Tennis Australia on a shot taxonomy in the era of tracking data in professional tennis. Another featured talk was delivered by co-presenters Michael Lopez of Skidmore College and Ben Baumer of Smith College, titled "How Often Does the Best Team Win? A Unified Approach to Understanding Randomness in North American Sport."

NESSIS also featured a panel discussion, "Past, Present, and Future of Analytics in the NFL," consisting of panelists Dennis Lock of the Miami Dolphins, Karim Kassam of the Pittsburgh Steelers, and Sandy Weil of the Los Angeles Rams. Aaron Schatz of Football Outsiders served as moderator.

Abstract submissions to NESSIS included statistical applications to baseball, basketball, football, hockey, tennis, golf, soccer, cricket, volleyball, Australian football, and more. Abstracts were critically screened to keep content quality high. Peer-reviewed NESSIS proceedings will be published in two tracks. Papers focused on methodology were invited for submission to the *Journal of Quantitative Analysis in Sports*, while application-focused papers were invited for submission to the *Journal of Sports Analytics*. All presenters were invited to submit.

The motivation for a sports statistics symposium is predicated on the need for advanced analytic methods in games and sports. The application of statistical methods in sports is rapidly growing. Sports teams use statistical analyses to evaluate players and game strategies, and sports associations develop ranking and ratings systems of players and teams. The evolution of the application of statistics to sports is enhanced with extensive collaboration and interaction between sports analysts and professional statisticians. Unfortunately, opportunities for this collaboration are still relatively uncommon, as academic statisticians often work in isolation developing statistical methods for sports applications, while sports organizations often have limited access to advanced statistical expertise and cutting-edge statistical tools for the analysis of sports data. The main goal of NESSIS is to bridge this gap.

NESSIS was sponsored by the American Statistical Association (ASA), Statistics in Sports Section of the ASA, Boston Chapter of ASA, Harvard University Department of Statistics, ESPN Analytics, DeGruyter, and IOS Press.

The NESSIS founders hope the enthusiasm generated from NESSIS will increase the collaboration between academic statisticians and analysts connected with sports teams and improve the quality of statistical design and analysis in sports. Future NESSIS events will encourage the development of cutting-edge statistical thinking in sports applications and adaptations to evolving data-collection technologies. ■

Master's and Doctoral Programs in Data Science and Analytics

Steve Pierson, ASA Director of Science Policy

More universities are starting master's programs in data science and analytics, of which statistics is foundational, due to the wide interest from students and employers. Amstat News reached out to those in the statistical community who are involved in such programs. Given their interdisciplinary nature, we identified programs involving faculty with expertise in different disciplines to jointly reply to tour questions. We profiled a few universities in our April and June issues; here are several more, plus a few PhD programs.

Harvard University

David C. Parkes is the George F. Colony Professor of Computer Science at the John A. Paulson School of Engineering and Applied Sciences and the co-director of the Harvard Data Science Initiative.

Rachel Schutt is lecturer in data science and education program director of Harvard's Institute for Applied Computational Science.

Neil Shephard is professor of economics and statistics and department chair of statistics at Harvard University and the co-chair of the Data Science Education Committee of the Harvard Data Science Initiative.

Master of Science in Data Science

Website: *www.seas.harvard.edu/programs/graduate/applied-computation/master-of-science-in-data-science*

Year in which first students graduated/expected to graduate: 2019

Number of students enrolled: We are anticipating a class of 40–50.

Partnering departments: Institute for Applied Computational Science, Statistics, Computer Science, Applied Math

Program format: This is an in-person, full-time program. Twelve courses are required, and the degree will typically be completed over three semesters. At least one research experience is required and can be satisfied by a capstone project course or a semester-length independent study project. A final requirement is the presentation of a poster on a data science project at the annual project showcase.

Additionally, PhD students in other departments can specialize in data science as a secondary field by completing a selection of course requirements.

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

The basic elements of our curriculum are the following:

- Four required technical courses, including our full-year "Introduction to Data Science" sequence and a course in advanced scientific computing
- One statistics elective
- One computer science elective
- One "critical thinking in data science" course
- One research experience
- Four data science electives that can be satisfied across many departments

Our data science curriculum was developed as a joint effort between the statistics department and computer science working with the Institute of Applied Computational Science (IACS) within Harvard's Engineering School. We already had in place a master's in computational science and engineering program (run by IACS), which is now in its fifth year, and were attracting many students who placed into data science positions, so we wanted to expand our offerings to include a second master's program in data science.

Additionally, we already had in place a one-year Introduction to Data Science course—now in its fourth year—jointly taught by IACS, statistics, and computer science faculty. This is a survey of all topics we think are essential to data science: the data science process, machine learning, data visualization, statistical inference, algorithmic and computational thinking, experimental design, best practices in coding, and ethics and algorithmic accountability. This course maps very well to a master's curriculum and is one of the core required elements of the program.

We have a faculty standing committee, which includes faculty from across disciplines. We have an advisory board that includes industry experts from Google, Microsoft Research, and other leading companies and national laboratories. We met with them in a full-day event to review the curriculum of the new master's program, clarify learning objectives, and understand employer needs.

What was your primary motivation(s) for developing a master's data science/analytics program? What's been the reaction from students so far?

Data science is a rapidly emerging field. It includes a hybrid set of skills and thinking from statistics and computer science, along with new methodologies and skills not traditionally taught in universities. Students typically graduating from statistics programs or computer science programs were not being exposed to ideas from across disciplines. We needed to train students whose thinking could transcend departmental boundaries, as well as develop a new curriculum that gives students the foundations in these new skills (statistics at scale, experimental design at scale, algorithms for large data sets, building data products in production, and algorithmic accountability and ethics). A new curriculum needed to be created to train students with the foundation and discipline to be leaders in industry and research.

How do you view the relationship between statistics and data science/analytics?

The field of statistics is foundational for data science.

What types of jobs are you preparing your graduates for?

We are preparing students with computational and analytical skills to get jobs across sectors and disciplines. Students are able to work at technology companies like Facebook and Google; media companies like BuzzFeed and *The New York Times;* and finance companies like Morgan Stanley, Two Sigma, and Citadel. They also are able to work in start-ups, ed-tech, fintech, marketing, and consulting.

A few students each year go on to PhD programs in robotics, computer science, statistics, neuroscience, and business.

What advice do you have for students considering a data science/analytics degree?

If you want to build a computational and statistical foundation that can be applied across multiple application areas (e.g., finance, genetics, marketing), this is a good area to get into. If there is already an application area you are interested in, you should examine whether it may be better for you to deeply specialize in that area. However, we try to construct the program so as to build a strong foundation while giving students the flexibility to go deeper into their areas of interest through the electives.

Describe the employer demand for your graduates/students.

We don't yet have any graduates for the master's in data science. But, for our master's in computational science, all our students get jobs before graduation. They tend to have multiple offers to consider. We're highly selective in who we admit in the first place. Many students tend to have formed relationships with potential employers during the course of the program through internships and capstone projects.

Do you have any advice for institutions considering the establishment of such a degree?

Collaboration and a shared vision between the statistics department and computer science was essential. When you start with the premise that you want to create the best educational experience that you can for students, then organizational politics becomes secondary. While there sometimes are additional bureaucratic hoops when more than one department is involved, these aren't insurmountable.

Part of the success of the program is due to having the Institute for Applied Computational Science already in place, with a full-time staff dedicated to administering these master's programs and working to create a holistic experience for students, including advising, mentoring, community-building, job talks, seminars, and conferences for faculty and students.

The University of British Columbia

Master of Data Science

Website: *mds.science.ubc.ca*

Year in which first students graduated/expected to graduate: 2017

Number of students enrolled: 45

Partnering departments: Departments of Statistics and Computer Science

Program format: 10-month professional master's program, in-person, 30 credits, two-month capstone project

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

The UBC Master of Data Science is a professional program harnessing the combined expertise of the UBC departments of computer science and statistics. It helps meet the growing need for people who can apply computational and statistical techniques to data and then effectively communicate results from analyses to various stakeholders.

Using descriptive and prescriptive techniques, students extract and analyze data from both unstructured and structured forms and then communicate the findings of their analyses in ways that promote informed decisions based on data. Multidisciplinary in nature, the Master of Data Science program enables graduates to span both the statistical and computational perspectives. The curriculum, informed by consultations with local industry, takes a scientific approach to use data to explore different hypotheses.

The program includes 24 one-credit courses offered four at a time, in four-week segments. Courses are lab oriented and delivered in-person. Graduates can appropriately select and tailor data science methods to deal with diverse data types (numerical, categorical, text, dates, graphs, etc.) across diverse subject-area domains.

The program also includes a two-month (six-credit) capstone project, allowing students to work alongside their peers with real-life data sets. In this project, students determine questions of interest for the data in conjunction with mentors drawn from academia, industry, and nonprofits. Students experience the complete data science value chain, applying techniques they have learned to investigate the questions relevant to the mentors.

Although professional experience is desired, it is not a mandatory requirement.

Students have backgrounds across a wide range of fields, including biology, business, engineering, and the social sciences.

Milad Maymay earned his BS at The University of British Columbia. He has more than 17 years of experience managing projects and programs in both the nonprofit and public sectors.

Giuseppe Carenini has been teaching artificial intelligence, machine learning, and natural language processing for more than 10 years. He is also collaborating with companies that aim to make data more useful in supporting complex decisions (Compass) and for public engagement (Metroquest).

Paul Gustafson earned his BS in mathematics and master's in statistics from The University of British Columbia and his PhD in statistics from Carnegie Mellon University. Gustafson also won the CRM-SSC Prize and is a Fellow of the ASA.

Prerequisites include the following:

- One course in programming
- One course in probability and/or statistics
- One course in calculus or one course in linear algebra

Completion of a course in both calculus *and* linear algebra is recommended.

What was your primary motivation(s) for developing a master's data science/analytics program? What's been the reaction from students so far?

In every domain, from health care and e-commerce to utilities and gaming, a staggering amount of data has led to a new field and an unprecedented demand. There is a growing need in many fields (especially in western Canada, the Pacific North West, and Silicon Valley) for people who can apply computational and statistical techniques to data and then effectively communicate results from analyses to various stakeholders.

Students' reactions to the program have been extremely positive. Almost all the students in our first cohort—which completed in June 2017—are employed, and more than 500 candidates applied for September 2017 entry to the program.

How do you view the relationship between statistics and data science/analytics?

In this program, and generally on this campus, data science is viewed as being built upon a solid foundation in statistics and a solid foundation in computer science.

What types of jobs are you preparing your graduates for?

The extraordinary thing about data science is that our graduates can work in almost every industry and sector—government, education, health care, consulting, tourism, and technology. Depending on the background and experience of the students prior to the program, our graduates get jobs in entry- to mid-level positions as data scientists, data architects, or data analysts. Our graduates are working for organizations such as Microsoft, Electronic Arts, Visier, The University of British Columbia, and Translink (Metro Vancouver's public transportation authority).

What advice do you have for students considering a data science/analytics degree?

Data scientists need to be familiar and comfortable with a variety of skills and tools. That is why our program is almost an equal combination of core computer science concepts and tools (about one-third of the courses), core statistics concepts and tools (another third), and more emerging and data science–specific topics (the final third). Students should be aware of this prior to choosing a career in data science. Those who prefer more programming and are less interested in interacting with domain experts should consider big data programs or computer science programs. But those who prefer variety in their day-to-day work or prefer to be generalists can consider a career in data science.

Describe the employer demand for your graduates/students.

The demand for our graduates/students is significant. We organized more than 15 employer/industry talks for our first student cohort. Furthermore, we received numerous job postings and requests from industry partners to participate in our capstone course. The demand seems to be increasing even further this year.

Do you have any advice for institutions considering the establishment of such a degree?

The program benefits from great collaboration between the department of computer science and the department of statistics. Drawing a program co-director from each department and having about a 50-50 split in resources and responsibilities has proved effective. Each department has pride and "skin in the game" when it comes to making this program successful.

Texas A&M University

Simon Sheather is the academic director of the MS (analytics) program at Texas A&M University. From 2005–2014, he served as professor and head of the department of statistics at Texas A&M University.

Jon (Sean) Jasperson earned his PhD in business administration with an emphasis in information management science from Florida State University.

Master of Science in Analytics

Website: *http://analytics.stat.tamu.edu/snapshot.php*

Year in which first graduated: 2015

Number of students enrolled: 110. Class of 2018 = 45. Class of 2019 = 65

Partnering Departments: Texas A&M Department of Statistics and Mays Business School

Program format: The program is 36 credit hours, five semesters long, and taught live online to working professionals on a part-time basis. Full-time employment with at least three years of work experience is required. The program has no thesis option; rather, students bring data from their organization and build predictive models as a graduation requirement. Our work-based capstone project is what makes the program unique. Admissions are cohort-based and only offered in August.

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

Taught in partnership with Texas A&M Mays Business School, the part-time five-semester curriculum in the program consists of 67% statistics and 33% business. The program is taught by distinguished faculty credited with receiving numerous teaching awards at the university level in addition to having countless citations in their field. The lectures use relevant case studies and real-world applications designed to teach students how to apply what they learn immediately. The curriculum was designed to teach students how to apply statistical methods using big data to solve business problems.

What was your primary motivation(s) for developing a master's data science/analytics program?

To narrow the gap. The main motivation for developing the program was to help students and

companies get a competitive advantage in analytics. The extensively quoted *U.S. News and World Report* analysis about the growing gap between people with skills to analyze data and those who don't inspired us to get started. Wanting to be different and still help the cause, our program focused on working professionals and partnering with companies to train and develop their own.

To offer a unique experience with a work-based capstone project. The program graduated its first class in 2015, and the reaction since has been strong. Students have valued their experience in the course as first-rate—a true testament to the innovative curriculum, the distinguished faculty who teach, and the strong impact of the work-based capstone project. A significant number of the graduates have received generous promotions from their employers and been asked to expand and optimize analytics in their organizations.

Companies also value the program in this aspect, as they have sent more employees from different divisions to enroll after graduating employees in previous cohorts.

How do you view the relationship between statistics and data science/analytics?

The "buzz" word frenzy. Today, it's data science. Tomorrow, it's machine learning. The day after? Who knows? It's difficult to pin an exact definition of what data science is given its broad reach—and compare it to a set discipline. Statistics/statistician is a "sexy" field/job in itself. The ability to predict with impressive accuracy, using sophisticated modeling and a touch of genius, is a unique skill that not many have. What should the relationship between statistics and whatever the buzz word be? Strong. A firm grasp on one yields astonishing results when used with the other.

What types of jobs are you preparing your graduates for?

The leaders in analytics. The MS analytics program prepares our students to be leaders and pioneers of analytics in their organizations. Designed for the working professional, our students are not active job seekers—rather, they receive generous promotions. Some have shared that they received promotions to chief data scientist, senior data scientist, and lead performance analyst. Our students are also asked to optimize and expand analytics within their organizations.

What advice do you have for students considering a data science/analytics degree?

Research. There are more than 150 analytics/data science programs offering degrees, advanced degrees, and certificates. Each one offers unique classes tailored to fit the wants and needs of prospective students.

What are your needs? Answer the following questions:

- What am I looking for in an analytics program?
- How will that specific program meet my needs, both personal and professional—short term/long term?

A degree in an area like data science/analytics offers a much broader skill set than traditional computer science/engineering or statistics. With such programs, students receive a healthy dose of both fields, with application capabilities in many areas across many industries.

Describe the employer demand for your graduates/students?

Strong demand. Since our program is for working professionals, we don't track placement. But, we do receive a significant amount of inquiries with internship/job opportunities for our students that we share with them.

Do you have any advice for institutions considering the establishment of such a degree?

Be unique. With more than 150 programs out there and more being created, start with this question: What are the elements that will make your program unique?

Build strong partnerships. Survey your corporate contacts who seek to employ graduates and who would collaborate with your department.

Keep it fresh. Find ways to keep material fresh in class, materials that keep students engaged with relevant coursework.

University of Colorado, Denver

Katerina Kechris is an associate professor in the department of biostatistics and informatics at the University of Colorado Anschutz Medical Campus. Her research focuses on the development and application of statistical methods for analyzing high-throughput omics data.

Farnoush Banaei-Kashani is an assistant professor in the department of computer science and engineering at the University of Colorado, Denver. His research focuses on developing novel machine learning, as well as data mining and management techniques that enable big data lifecycle.

Biostatistics MS Emphasis in Data Science Analytics

Computer Science MS Track in Data Science in Biomedicine

Website: *https://goo.gl/pRTYhT* and *https://goo.gl/BDqgNL*

Year in which first students graduated/expected to graduate: 2019

Number of students currently enrolled: 2–3/year under each track

Partnering departments: Biostatistics and Informatics, Computer Science and Engineering

Program format: The biostatistics MS is an in-person degree with 36 credit hours and a culminating thesis or publishable paper. Students are typically full time and participate in 1–2 years of a research assistantship. The emphasis in data science analytics is a focus area within the MS degree where students take three elective courses (total nine credits) from a list of courses related to data science, of which six credit hours will count toward their MS electives and the other three credit hours are required additional credit hours for the emphasis; hence, a total of 39 credit hours is required for graduation from the emphasis. Students in the emphasis will also write a thesis (or publishable paper) with a focus on data science.

The computer science MS is an in-person degree with 30 credit hours, including nine, 15, and six credit hours for core courses, elective courses, and thesis, respectively. Students are typically full time and participate in two years of a research assistantship. The data science in biomedicine track is a focus area within the computer science MS degree where students take three elective courses (total of nine credits) from a list of courses related to biomedicine, of which three credit hours will count toward their MS electives and the other six credit hours are required additional credit hours for the track; hence, a total of 36 credit hours is required for graduation from the data science in biomedicine track. The track graduates will write a thesis (or publishable paper) with a focus on data science in biomedicine.

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

We believe a challenge of interdisciplinary education is finding the right balance of "breadth versus depth." That is, depth in any one topic may be sacrificed by covering multiple disciplines. On the other hand, the interdisciplinary nature of the program may be compromised if the curriculum is focused too much on one topic. We designed our programs to be parallel tracks within existing degrees so students have depth in one focus area (biostatistics or computer science), and then diversify their skills and expertise in complementary areas with additional classes and thesis research.

What was your primary motivation(s) for developing a master's data science/analytics program? What's been the reaction from students so far?

We developed biomedical-related data science tracks within the existing biostatistics MS and computer science MS degree programs in response to the changing landscape of biomedical research and technology, which is relying more on the generation, archiving, querying, analysis, and interpretation of large data sets. By implementing a new track, students pursuing this training within the respective MS program will have an official designation within their degree. This designation will help with employment and other opportunities such as internships and fellowships, where it would benefit students to show documented training and experience in data science. These tracks were developed in parallel to promote synergy between the departments of biostatistics and informatics and computer science and engineering.

How do you view the relationship between statistics and data science/analytics?

This relationship has been discussed in great detail on many blogs, editorials, and websites. Without getting into those details, we adapted a popular quote that is a pithy description of data scientists: "It's the person who is better at statistics than any computer scientist and better at computer science than any statistician" (adapted quote from Josh Wills, director of data engineering at Slack, *https://goo.gl/8HcmXG*).

What types of jobs are you preparing your graduates for?

This is the first year of our tracks, so we do not have job placement data yet. But the curricula are designed so graduates will be prepared to work in biomedical sectors (academic, public, and private) that require the analysis of large and diverse data sets from high-throughput omics, imaging, biomedical sensors, and electronic health records.

What advice do you have for students considering a data science/analytics degree?

We believe it is important to find a program that stresses interdisciplinary education, where students gain knowledge and skills in multiple domains from experts in the respective areas. However, a challenge of interdisciplinary education is finding that right balance of "breadth versus depth," as discussed previously. When researching programs, students should ask faculty about their philosophy for striking that balance. This would give more information about how that interdisciplinary degree is different than pursuing related degrees such as computer science or (bio)statistics.

Describe the employer demand for your graduates/students.

In Colorado and nationwide, data science skills within the biomedical field are in high demand in industry (e.g., biotechnology and pharmaceuticals), the public sector (e.g., NIH), and academia.

Do you have any advice for institutions considering the establishment of such a degree?

Even if there is mutual interest among different departments, creating an interdisciplinary program has practical challenges. In our case, the two departments are on different campuses (~ 8 miles apart), have different tuition structures, and follow different academic calendars. Despite these differences—with support from department and school leadership and good communication between the programs—we were able to overcome these practical challenges.

As the ASA reached out to the statistical community for their involvement in starting master's programs in data science and analytics, we learned about a few doctoral programs we wanted you to know about. We're grateful to these universities for telling us about their innovative programs.

University of Wisconsin-Madison

Karl Broman, a professor in the department of biostatistics and medical informatics at the University of Wisconsin-Madison, is an applied statistician focusing on the genetic dissection of complex diseases in model organisms. He was named an ASA Fellow in 2016.

PhD Data Science Analytics
Biomedical Data Science PhD

Website: *https://bit.ly/MadBDS*

Year in which first students graduated/expected to graduate (or year of first class for PhD program): 2018

Number of students enrolled: Expect 6–10 per year

Partnering departments: Biostatistics and Medical Informatics

Program format: In-person; 51 credits; thesis; traditional full time

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

Our biomedical data science PhD program integrates the two related disciplines of biostatistics and biomedical informatics. Students select three year-long sequences from a set of core topics, including at least one biostatistics sequence (for example, biostatistics methods) and at least one computer science/informatics sequence (for example, artificial intelligence/machine learning). Students will also complete at least six credits of biology coursework (such as genetics and genomics) and three semester-long research rotations concerning substantive problems in biomedical data science and advised by a computational faculty member in collaboration with a faculty member from the biological, biomedical, or population health sciences. Cohort cohesion

is developed through an in-depth second-year reading course—in which a selection of seminal articles in (bio)statistics, computer sciences, and biology is deconstructed—and a third-year professional skills course. Prerequisites include courses in calculus, linear algebra, programming, and data structures, but students will be admitted with a portion of these and can complete the remainder during their first year in the program.

What was your primary motivation(s) for developing a doctoral data science/analytics program? What's been the reaction from students so far?

The primary motivation for our program was to synthesize training in biostatistics and biomedical informatics (which our department has done at the faculty level for 20 years) to provide students with broad computational skills, along with knowledge in an area of biomedical science, so they can make sense of the complex, high-dimensional data that is now the norm in biology, biomedical research, and public health policy. We are recruiting our first class of PhD students, who will enroll in fall 2018.

How do you view the relationship between statistics and data science/analytics?

Statistics, as a field, is sometimes viewed as being restricted to the use of probability theory for formal inductive inference and the quantification of uncertainty in such inference. But applied statisticians' work has always included a broad set of activities, including data management, data cleaning, data visualization, statistical computing, software development, and communication about data. In some ways, the term data science does a better job of capturing these activities, including other techniques such as machine learning, that have been developed by computer scientists. I would like statistics to be viewed more broadly, to include the full spectrum of problems that one must confront when seeking to make sense of data. However, it is important to both recognize and take advantage of the many important data science ideas that have arisen outside of statistics.

What types of jobs are you preparing your graduates for?

Students graduating from our program will be prepared for academic positions and positions in industry and government. Our program includes a professional skills seminar through which students will explore and prepare for the range of employment opportunities so they can make informed career choices and be ready to carry out a successful job search.

What advice do you have for students considering a data science/analytics degree?

Find some data—perhaps a friend's data—and dig in! Focus first on data visualization, but always have specific questions you're seeking to address. It's easier to acquire and develop your computing and data analysis skills if you have specific challenges in mind.

Describe the employer demand for your graduates/students.

It's clear there's great demand for skilled data scientists. It also seems clear that employers focus not so much on skills in statistical theory as on communication, ability to work in an interdisciplinary team, and more general problem-solving abilities.

University of Central Florida

Liqiang Ni is an associate professor of statistics in the department of statistics at the University of Central Florida. His main research interests include dimension reduction, multivariate analysis, actuarial science, and business intelligence. He has served as the graduate coordinator since August 2017.

Shunpu Zhang is a professor of statistics and chair of the department of statistics at the University of Central Florida. Under his leadership, he and his colleagues created this new PhD program in big data analytics to spearhead UCF's effort to meet the big data challenge in 2017.

PhD in Big Data Analytics

Website: *http://sciences.ucf.edu/big-data*

Year in which first students graduated/expected to graduate (or year of first class for PhD program): Fall 2018

Program format: In-person; 72 credit hours beyond a bachelor's degree, with up to 30 hours transferable from a completed master's program in statistics, computer sciences, or mathematics; dissertation; full-time students; graduate teaching/research assistantship available

Please describe the basic elements of your data science/analytics curriculum and how the curriculum was developed.

We require the incoming students for our PhD program in big data analytics to have a bachelor's degree in statistics, mathematics, and computer science with experience in at least one programming language. The curriculum includes advanced statistics, big data architecture such as distributed storage and processing, data mining, machine learning, and other recent developments in big data analytics. These courses will be taught (or jointly taught) by statisticians, computer scientists, and experts from the industry. We expect our students to possess the following core skills: data management; algorithm development; programming in R and Python; statistical inference; and communication and data visualization.

Traditional PhD programs in statistics aim to train students to analyze small to medium size, structured data. Our curriculum will focus on big data analytics. It is to train researchers with a statistics background to analyze massive structured or unstructured data to uncover hidden patterns; interesting, actionable associations; and other useful information for better decision-making. In addition to statistical inference and software, the new program has an interdisciplinary component that combines the strength of statistics and computer sciences.

What was your primary motivation(s) for developing a doctoral data science/analytics program? What's been the reaction from students so far?

Started in 2001, the department's data mining program (MS level) is the oldest such program in the United States. In recent years, we have seen a growing need for an educated and talented workforce of data scientists above the MS level who can contribute to industry, government, and academia through innovative applications of data analysis methodologies. The PhD program we are developing pursues high levels of community and business engagement. Our PhD Industry Advisory Board consists of member-participants from CFE Federal Credit Union, Sodexo, UCF Institute for Simulation and Training, the Walt Disney Company, Johnson & Johnson, CitiGroup Inc., iCube Consultancy Services Inc., UniKey Technologies, SAS, and Health First. The board continuously provides feedback on industry-driven competencies.

How do you view the relationship between statistics and data science/analytics?

We believe statistical science is an integral part of data science/analytics. A good data scientist/data analyst must be a good statistician, regardless of the label or title.

What types of jobs are you preparing your graduates for?

We are preparing graduates for academic/research institutions, industry, and government.

What advice do you have for students considering a data science/analytics degree?

Be open-minded and always ready to learn something new. You do not have to choose between hiking the mountain (statistics) and swimming the ocean (computer science, etc.). You can do both.

Describe the employer demand for your graduates/students.

Data scientists are in short supply, and the compensation for data scientists is very high. A McKinsey study predicts that, by 2018, the number of data science jobs in the United States alone will exceed 490,000, but there will be fewer than 200,000 available data scientists to fill these positions. Data scientists can earn a base pay of $116,840 (Glassdoor, 2016) and an average base salary of $113,436 (*Forbes*, 2016).

Do you have any advice for institutions considering the establishment of such a degree?

A big data analyst needs to have the ability to use existing methods or develop new methods to uncover true information from enormous amounts of data. To do so, a program in data science needs to provide students rigorous training in big data structure, programming skills, statistical methodologies, algorithm development, and interpreting and communicating the information discovered in the data. We believe such a goal can only be achieved by developing a cross-department joint program, instead of an "add-on" program that only requires students to take a few courses from other disciplines. ■

Doug flying—Doug's son was his first passenger and took the photo.

PASTIMES OF STATISTICIANS

What Does Doug Splitstone Like to Do When He Is Not Being a Statistician?

Piper Warrior II (Photo courtesy of Doug)

Doug Splitstone

Who are you, and what is your statistics position?

The framed certificate on the wall of my office recognizes Doug Splitstone's 50th anniversary of membership in the ASA. This year marks 52 years.

I began my career as a professional statistician designing metallurgical and chemical experiments and performing subsequent data analyses at U. S. Steel (USS) Research. In late 1969 or early 1970, I was asked, "What number should U. S. Steel agree to in negotiating a US Army Corp of Engineers wastewater discharge permit?" The answer to that question started me on a career odyssey that continues today. It also fixes my career of dealing with problems of the environment as predating the US Environmental Protection Agency, founded in December 1970.

It was during my tenure with USS that I also learned the intricacies of atmospheric dispersion modeling and the monitoring of air quality. Dealing with water and air discharges necessitated teaching myself the techniques of time series analysis.

Also during that period (1974), I was fortunate enough to be a member of the founding group and first chair of the ASA's ad hoc Committee on Environment Guidelines and Standards. That ad hoc committee later became the Continuing Committee on Statistics and the Environment and has now morphed into the Section on Statistics and the Environment.

With the downsizing of the steel industry in the early 1980s, I joined—in succession—two major environmental consulting firms. This required coming to grips with the statistical issues of dealing with hazardous waste and radioactive contamination. Estimation of the extent of contamination and volumes of contaminated material required becoming knowledgeable in geostatistical techniques, as well as the sampling theory of Pierre Gy.

Twenty-four years ago, I went into independent practice. My client base largely remains major industry, their environmental consulting firms, and/or their outside counsel. I have also had the pleasure of serving on several panels of the USEPA's Science Advisory Board.

Outside of the environmental arena, I have provided statistical support for the calorimetric calibration of a small nuclear reactor and completed several PhD dissertations in education and one in marriage counseling.

Those who have stuck with the above narrative might get the impression that my whole career has been one of learning about new things in order to help clients solve their problems. I hasten to add that my largest contribution is often getting a client to adequately define their problem.

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

I fly airplanes. Usually a single-engine Piper Warrior II (PA28-161).

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

The short answer is the urging of my son, who has been a licensed private pilot for many years. I took my first flight lesson at age 64 and earned my private pilot's license at age 69. And it is just a neat thing to do.

Becoming a pilot requires continual learning and practice to maintain skills. In addition to continued education to become a better pilot, at 74 years young, I am pursuing an instrument rating so I can fly through clouds, as well as below and above them. Flying also provides the opportunity for a total escape. There is only one thing to think about when flying an airplane, and that is flying the airplane. Everything else has to wait until you are back on the ground and the plane is in the hangar. ■

STAT*tr@k*

How to Write an Effective Cover Letter and Résumé

"You never get a second chance to make a first impression." When it comes to applying for jobs, this adage is gospel.

Your résumé and cover letter may be your only chance to interest a prospective employer. Accordingly, your cover letter should clearly and concisely state why the details included in your résumé make you a good fit for the specific company and position for which you apply. Even though the unemployment rate is steadily decreasing, it is safe to assume many qualified statisticians will apply for any given position (especially for entry-level jobs). Your cover letter and résumé should illustrate your unique qualifications and differentiate you from your competition.

The foundation of your comprehensive application should be a polished résumé or curriculum vitae ("CV"). The job description or posting will most likely state which is preferred, but if not, contact the hiring manager to clarify. Generally speaking, a résumé is more appropriate for junior-level positions outside academia, and a CV for senior-level or academic positions.

A résumé should consist of a single page and accurately itemize the following:

1. Education

- List the degree(s) earned, educational institution(s), and major(s). Optionally, include graduation dates, GPA, and honors.

2. Relevant work experience

- List each position beginning with the most recent. Include the job title, employer, dates employed, and duties performed.

3. Relevant skills

- List all skills, including software knowledge. Be sure to list your proficiency at each language, as well. For example, R (expert), SAS (proficient), Python (competent), Tableau (advanced beginner), and MapReduce (novice).
- List significant accomplishments or proficiencies with a software knowledge as applicable to the job description.
- If you are a new graduate and do not have much relevant experience, consider also including sections for relevant coursework and/or exams passed.
- If you choose to include hobbies on your résumé, try to make them as neutral as possible.

Note: Including an objective is outdated and has been widely replaced with the cover letter.

A CV will typically run at least a few pages. It will include the above mentioned items and a combination of the following:

4. A short biography describing your areas of interest and expertise

5. Published articles

6. Articles under review

7. Honors and awards

8. Invited presentations

9. Past and previous affiliations and associations, along with positions held

Your résumé or CV should accurately summarize your skills and experience textually, but should also aesthetically convey your ability to organize effective written communication. These tips are a good start:

- Use margins and spacing to comfortably fit text onto one page
- Use a standard typeface (e.g., Times New Roman or Arial) with font size 11
- Allow white space so the page does not feel cluttered, but try to avoid any white gaping holes

Visually, you should balance simple text and white space in your résumé. Clearly label the sections noted above to allow for simple navigation. Résumés can often be used to weed out applicants

Dawn Eash is an associate director in Berkeley Research Group's Los Angeles Century City office, where she consults on matters in labor and employment, intellectual property, commercial damages, public policy, health care, technology, and securities. She earned her bachelor's in finance and statistics from California Polytechnic University, San Luis Obispo, and her master's in statistics from North Carolina State University.

who are unqualified; if the hiring manager cannot easily distinguish your qualifications, your résumé may be passed over completely.

Although a complete and well-structured résumé or CV is necessary to be considered for an interview, an exceptional cover letter can move your application to the top of the heap. Your cover letter should follow these basic guidelines:

- Include your personal information at the top of the page.
- Include the date.
- Identify the company to which you are applying, along with the name of the hiring manager, if possible.

  Modify the company name for each application. Although the employer knows cover letters are often recycled, there is no need to highlight this fact.
- Adhere to formal letter-writing etiquette (e.g., "Dear Sir or Madam," "Sincerely").

  If you know the name of the hiring manager or their title, be as specific as possible in the greeting (e.g., "Dear Ms. Eash," "Dear Hiring Manager").
- Use correct spelling and proper grammar.

  Spell check, spell check, and spell check. Pay particular attention to words a spell check will not properly differentiate (e.g., their/there, its/it's) and for properly spelled but misplaced words (e.g., and/hand). Have your friends and colleagues proof not only spelling, but also grammar. Effective communication is an essential part of every statistician's career, and your cover letter should display that ability. Unfortunately, even a small typo diminishes from the efficacy of your cover letter. If English is your second language, be even more rigorous with this step to ensure your cover letter is effective.
- Limit the length to one page.

In the text of your cover letter, include a customized section for each application you send out. In these first few sentences, clearly state the position of interest and how your experience makes you a good fit not only for the position, but also for the company. Do some internet research on the company, and address what you find most exciting or attractive about working for that establishment.

If you apply for a job where your prior experience is not clearly relevant, it is doubly important to address why you are interested in segueing into a new field and what skills you bring. For example, if you apply to the private sector, but currently work at a government agency, you should directly discuss why you are interested in transitioning and which of your skills are transferable. If you have been out of the work force for an extended period of time, address what you did in the interim and why you are looking to re-enter the workforce.

The first few sentences may be all anyone reads of your cover letter, so these sentences should be a candid statement of why you are the best person for the job. While sample cover letters are amply available online, take the time to be sure this section clearly and concisely articulates your goals instead of relying on generic verbiage (i.e., gobbledygook).

Last, include a paragraph or two to detail your previous experience. Highlight important skills you possess, special achievements, and managerial experience. This section should feature a specific project or your most recent position and detail more clearly what makes you a distinctive candidate. If you apply to the same type of position at different companies, this section should be for the most part static, but scan through before sending out each application to be sure it is relevant for the particular position. For example, if the position requires predominantly client interaction, you shouldn't highlight your love for debugging code instead of the six-month consulting project you just completed.

Once you finish these steps and have a cover letter and résumé, do not be shy about getting it proofed. It is entirely more preferable for your coworker, career center counselor, or mom to catch your spelling, grammar, or formatting mistake than your potential employer.

Once you are ready to send, follow the job posting instructions for submitting an application. If none exists, it is customary to attach your final cover letter and résumé as PDF or Word documents to an email. Be sure to include a formal greeting and a short sentence stating the position you are applying for and that you have attached your cover letter and résumé. The attachments should be clearly labeled with your name (e.g., "Dawn Eash Résumé.pdf" and "Dawn Eash Cover Letter.pdf").

The time and research you put into your cover letter and résumé will be obvious to the employer and will make your application a great first impression. Now all you have to do is get your suit ready, and don't forget to send a thank you email after the interview! ■

2018 Internships

Many companies are looking for 2018 interns. In fact, there are so many, the list is too long to print. Instead, we included the full descriptions for all internships on STAT*tr@k* at *http://stattrak.amstat.org*. You'll see from this list that there is something for everyone, from positions at pharmaceutical companies to a summer spent studying at media organizations nation-wide. If you are interested in improving your programming techniques, making connections, or honing your data analysis skills, apply for one of these opportunities.

AbbVie

Lake County, North Chicago, Illinois

Positions: Multiple

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

Deadline: January 31, 2018

Internships will begin in May/June and are 10–12 weeks.

Basic Requirements

- Be enrolled in a graduate-level curriculum leading to a PhD in statistics, biostatistics, bioinformatics, or highly related field
- Have completed at least two full years of graduate study prior to the start of the internship
- GPA: 3.0/4.0
- Be in good academic standing within your graduate program and overall at your university
- Have a track record of accomplishment
- Be authorized to work in the US
- Continue to be enrolled in grad school for at least one semester following the internship

Our science intern positions are posted on our website: *www.abbviecareers.com*.

American Association for the Advancement of Science

Various placements around the country such as NPR in Washington DC, the LA Times *in Los Angeles,* Scientific American *in New York, and Univision in Miami*

Positions: 1

Type of Student: Undergraduate, graduate, postdoc

Deadline: January 15, 2018

This 10-week summer program places mathematics students at media organizations nationwide.

Fellows receive a $5,000 stipend for the 10 weeks, and the expenses of travel to their fellowship site and Washington, DC, for orientation and wrap up are covered.

Contact: Rebekah Corlew, *rcorlew@aaas.org*

Amgen Inc.

Thousand Oaks, California

Positions: 1

Type of Student: PhD

Deadline: February 1, 2018

Amgen's 10–12 week internship program offers project experiences that affect patients' lives.

Basic Qualifications

- Must be 18 years or older
- Must have a bachelor's degree from an accredited college or university and have a 3.0 minimum GPA or equivalent
- Must have completed one year of graduate school before internship starts and be enrolled in an MBA program for an MBA internship OR a master's program for a master's internship OR a PharmD program for a PharmD internship OR a PhD for a PhD internship from an accredited college or university
- Must be enrolled in an accredited university following the potential internship or co-op assignment
- Must not be employed at the time the internship starts

Only candidates who apply via *http://careers.amgen.com* will be considered. Search the database by position title or requisition 46108.

Contact: Ali Hernandez, *universityrelations@amgen.com*

Astellas Pharma Inc.

Northbrook, Illinois

Positions: 1–2

Type of Student: PhD candidate in statistics or related discipline

Deadline: January 31, 2018

Full-time internships available in the summer for 10–12 weeks.

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

Send CV, personal statement of interest, and a letter of recommendation to *Biostat.Intern@Astellas.com.*

Bayer Pharmaceuticals

Whippany, New Jersey

Positions: 3

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

The intern will present their research project to the statistics department and a nonstatistical audience.

Required Skills

- Must be a high performer interested in the interactions between science and policy.
- Good oral and written communication skills
- Good working knowledge of SAS and/or R
- Must be available for a three-month assignment at Bayer's New Jersey site from June 2018 until the end of August 2018

FULL DESCRIPTIONS ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org*

- Must provide documentation showing proof of eligibility to work in the United States

Housing stipends are available.

To apply, visit *www.career.bayer.us/en* and search for clinical statistics intern.

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org*.

Biogen

Cambridge, Massachusetts

Positions: 4

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

Deadline: February 28, 2018, with rolling offers

Internship positions available for 12 weeks in the summer of 2018.

Candidates must have completed two years of graduate work and passed a doctorate qualification exam prior to the start of the internship, must return to school in fall 2018, and must be legally eligible to work in the US. Candidates should also have an understanding of statistical inference, working knowledge of SAS and/or R, good interpersonal skills, and the ability to effectively communicate research results.

To apply, send a CV to Ying Zhu, *ying.zhu@biogen.com.*

Boehringer Ingelheim

Ridgefield, Connecticut

Positions: Up to 5

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

Deadline: January 31, 2018

Multiple full-time summer biostatistics internship openings for approximately 12 weeks (May/June to August).

Requirements

- Must be a graduate student in fields related to statistics, cumulative GPA must be at least 3.0
- Must have completed 12 credit hours within a related major and/or other related course work
- MS or PhD candidate with at least two years of study
- Good written and oral communications skills
- Demonstrated proficiency in conducting statistical analyses using SAS or R

Applicants should go to *https://goo.gl/E76kCe* or visit *www.boehringer-ingelheim.com*, click "careers," and search for job number 1711539.

Bristol Myers Squibb

Princeton, New Jersey; Hopewell, New Jersey

Positions: Multiple

Type of Student: PhD candidates in statistics or biostatistics

Deadline: May 2018

Full-time internships are available in the summer and last 10–12 weeks. Part-time internships are available during the school year.

To be considered, you must have completed at least two years of course work and be working on your dissertation toward a PhD in statistics or biostatistics.

Candidates must have effective oral and written communication skills and good working knowledge of SAS and/or R.

To apply, send unofficial graduate transcripts, a résumé, and a cover letter to Rose Elcsics, *Rose.Elcsics@bms.com*

Center for Drug Evaluation and Research, Office of Biostatistics, US Food and Drug Administration (OB)

Silver Spring, Maryland

Positions: Multiple

Type of Student: Graduate students in statistics or biostatistics; completion of doctoral pre-qualifying exams preferred.

Deadline: March 31, 2018, with rolling offers

Multiple internship positions available from June 1 through August 31, 2018.

You will be expected to participate in the internship 40 hours per week in Silver Spring, Maryland. You are expected to have excellent oral/written communication skills, interpersonal and teamwork skills, strong problem-solving skills, strong computational skills, creativity and innovation, and self-management skills. Candidates should have proficiency with MS Office and programming experience with SAS and/or R. Also, the intern will prepare a written report and a 30-minute presentation.

Candidates must be eligible to work in the US. This paid internship may also include a transportation allowance.

Send CV and cover letter to *CDER-OTS-Biostatistics-Recruitment@fda.hhs.gov* with APPLICATION ORISE 2018 in the subject line by March 31, 2018. If you have a question, use QUESTION ORISE 2018 as the subject.

Division of Biostatistics, CDRH, FDA

Silver Spring, Maryland

Positions: 3–5

Type of Student: Advanced PhD students

Deadline: April 30, 2018

The Division of Biostatistics CDRH, FDA, plans to hire 3–5 advanced PhD graduate students in biostatistics/statistics as interns from June through August 2018. Preference will be given to senior doctoral candidates with a strong background in statistical methods and good computational and programing skills.

Send CV and cover letter to Ram Tiwari at *ram.tiwari@fda.hhs.gov.*

Eli Lilly and Company

Indianapolis, Indiana

Positions: Multiple

Type of Student: Candidates are enrolled in a graduate-level curriculum leading to a PhD or master's in statistics or biostatistics. PhD students are required to have completed at least

three years graduate work by May 2018. Master's students must be US-authorized workers and must have completed at least one year of graduate study by May 2018.

Deadline: January 15, 2018

The internships start in either May or June and last 12 weeks.

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

PhD students should visit *https://goo.gl/uFqX5L* to apply.

Master's students should visit *https://goo.gl/Xbys6i* to apply.

The Emmes Corporation

Rockville, Maryland

Positions: 3–5 positions

Type of Student: MS or PhD in biostatistics

Deadline: March 30, 2018

Primary Responsibilities

- Perform descriptive and inferential statistical analysis
- Summarize results using tables and graphs for presentation to biomedical investigators or manuscript preparation
- Edit and finalize research databases for statistical analysis

Experience, Competencies, and Education

- Currently enrolled master's/PhD student in statistics or biostatistics
- Excellent analytical/problem-solving skills
- Attention to detail
- Ability to manage priorities effectively
- Familiarity with SAS or R

Submit your résumé and apply directly through website at *https://secure.emmes.com/emmesweb*.

Genentech Inc.

South San Francisco, California

Positions: 4–6

Type of Student: Graduate students pursuing PhD degree in statistics or related fields

Deadline: January 26, 2018

The biostatistics summer interns will work for 10–12 weeks under the supervision of experienced biostatisticians.

Applicants must be current graduate students pursuing a PhD in statistics or related field who have completed at least one year of graduate work by May 2018 and who will be returning to school in the fall of 2018. The applicant must be legally authorized to work in the US and have good working knowledge of R, S-Plus, or SAS.

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

GlaxoSmithKline

Collegeville, Pennsylvania

Positions: 2

Type of Student: MS or PhD

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

The co-op student will work under the supervision of statisticians and have the opportunity to do the following:

- Advise on design, sample size, and other aspects of statistical relevance in the planning of studies
- Provide statistical analysis, reporting, and interpretation of results of studies
- Provide statistical computing programs for use either within statistical sciences or by other R&D staff

This position is full time for five to six months. The position from January–June is posted in early October and the position from June–December is posted in late March.

To apply, visit the GSK website (*http://us.gsk.com/en-us/careers/internships-and-co-ops*) and search for "Co-op/Statistical Sciences."

Google.com

Kirkland, Washington; Seattle, Washington; Mountain View, California; San Francisco, California; New York City, New York

Positions: TBD

Type of Student: PhD

Deadline: January 5–22, 2018

Minimum Qualifications

- Must be enrolled in a full-time degree program and returning to the program after the internship
- Currently pursuing a PhD in statistics, or another discipline involving experimental design and quantitative analysis of experimental data
- Experience using technology to work with data sets such as scripting, Python, statistical software packages (R, S-Plus, SAS, or similar)

To apply, visit *https://goo.gl/iupEsR*.

Institute for Defense Analyses (IDA)

Alexandria, Virginia

Positions: 5

Type of Student: Graduate and PhD

Deadline: January 6, 2018

IDA is seeking applicants with statistical expertise for summer associate positions. Positions are available with a variety of foci.

Applicants are required to submit a résumé and transcripts. Those selected will be subject to a security investigation and must meet eligibility requirements for access to classified information. US citizenship is required.

Apply at *https://goo.gl/NBV9Gm*

Contact: Lamarr Colvin Jr., *lcolvin@ida.org*

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org*.

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org.*

Janssen R&D, a Division of Johnson & Johnson

Spring House, Pennsylvania; Titusville, New Jersey; Raritan, New Jersey

Positions: 10

Type of Student: PhD candidate

Deadline: February 15, 2018

Qualifications

- Candidates must be enrolled in an accredited college (not necessarily taking classes) and pursuing a PhD in biostatistics, statistics, or a related discipline
- Student must be available for 10–12 weeks from May through August and have the ability to work full time
- A minimum 3.0 GPA
- Students must be able to provide their own transportation to/from their work location

Visit *https://jobs.jnj.com/jobs* for a full description and to apply. Use the search term "SDS" without the quotes.

Jefferson University

Philadelphia, Pennsylvania

Positions: 3

Type of Student: Undergraduate, graduate

Deadline: February 15, 2018

Interns will:

- Apply statistical thinking to research in the biomedical sciences
- Analyze and interpret real-world biomedical data
- Develop statistical programming skills in SAS, R, and other languages
- Practice communication of statistical methods and results through written and oral presentations
- Receive guidance and mentoring regarding future studies and career trajectory

The internship will run for 8–10 weeks from June to August. Interns will be paid a small stipend.

Applicants may be current students or recent graduates.

For undergraduate students (or those with an undergraduate degree), any degree program is acceptable, but applicants should have strong mathematical and analytical skills and at least one course in computer programming.

For graduate students (or those holding a graduate degree), the degree program should be statistics, biostatistics, or a similar quantitative field.

Apply at *https://goo.gl/tWxohp.* Requests for interviews will be sent by March 15.

JPMorgan Chase & Co. – Chase Finance Modeling

Columbus, Ohio

Positions: 5

Type of Student: PhD

Deadline: March 1, 2018

The intern in this position will focus on building models to answer questions and create forecasts for groups across finance. Past internship projects have included the following:

- Building a model to forecast debit card activity
- Forecasting account closure rates for business banking customers
- Identifying which branches have the highest risk of bank robbery
- Predicting the fraction of certificates of deposits that will close early

Contact: Rebecca Sela, *Rebecca.j.sela@chase.com*

Liberty Mutual Insurance

Boston, Massachusetts; Seattle, Washington

Positions: 18–20

Type of Student: Master's or PhD candidates in mathematics, statistics, economics, operations research, or a related field. For PhD candidates, completion of doctoral prequalifying exams is preferred.

Deadline: N/A

In this 10–12 week internship, you will solve real business problems. Candidates will demonstrate proven statistical/mathematical and analytical skills as acquired through the pursuit of a master's or PhD degree and a record of academic achievement, including a minimum 3.5 cumulative GPA. Solid oral/written communication skills and the ability to work in both a team environment and independently are desired. Proficiency in SAS, R, or Python preferred.

To apply, visit *https://goo.gl/8YN1EW.* A housing subsidy is available for eligible candidates.

The Lubrizol Corporation

Wickliffe, Ohio

Positions: Multiple

Type of Student: All levels

Deadline: February 2, 2018

Apply for data scientist intern positions at *www.lubrizol.jobs.*

Contact: Allison Rajakumar, *Allison.Rajakumar@Lubrizol.com*

Mayo Clinic

Rochester, Minnesota

Positions: 10–12

Type of Student: Undergraduate, graduate, PhD

Deadline: January 15, 2018

The Mayo Clinic has summer internship opportunities for undergraduate students who have completed their junior year and graduate students at all levels. Internships of 6–9 months may also be offered.

To apply, submit an unofficial transcript, résumé, and cover letter at *https://goo.gl/Y7HMZ7.* For information, visit *https://goo.gl/MZFNqT.*

Contact: Bud Harris, *Harris.Bud@mayo.edu*

Mental Health in the Country of Ukraine

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

Positions: 9

Type of Student: Undergraduate

Deadline: January 31, 2018

Visit the Ukraine REU website at *www.dordt.edu/events/ukraine-reu* to apply.

Participants will receive a $5,000 stipend for the 10-week program, which runs from May 24 to July 27, 2018. The first ~two weeks of the program will be spent in Ukraine. The remaining eight weeks of the program will be spent in Sioux Center, Iowa.

Some projects are for students with more statistical background and others for students with less, so all levels of students are encouraged to apply. Applicants must be US citizens.

Contact: Cindy Nederhoff, *cindy.nederhoff@dordt.edu*

Merck Research Laboratories

Upper Gwynedd, Pennsylvania; Rahway, New Jersey; Kenilworth, New Jersey

Positions: Approximately 10

Type of Student: Graduate

Deadline: Rolling deadline

Required

- Must have completed at least two semesters of graduate work toward an MS or PhD in statistics or biostatistics by May 30, 2018
- Must be available for 9–12 weeks, beginning June 2018
- Must be returning to school in fall 2018
- Must have effective oral and written communication skills
- Must have a good working knowledge of SAS, S-Plus, and/or R

Visit *www.merck.com/careers* to create a profile and submit your résumé. Résumés will not be accepted via email.

National Cancer Institute

Rockville, Maryland

Positions: 2

Type of Student: Flexible

Deadline: Three months before you want to start

See *https://goo.gl/mTDjzL*.

This is an unpaid internship. Recently, we have focused mostly on the nexus among randomization methods, allocation concealment, and selection bias. Familiarize yourself with this area of research before making contact.

Contact: Vance Berger, *nvance917@gmail.com*

The National Center for Health Statistics / Division of the National Health and Nutrition Examination Surveys

Hyattsville, Maryland

Positions: 2

Type of Student: Master's or PhD student in biostatistics or mathematical statistics, U.S. citizens or noncitizens with permanent residency

Deadline: Three months before start date

Gain educational and research experience by applying for one of our two unpaid internships.

The intern will engage with statisticians and survey methodologists on work of substantial importance. (*www.cdc.gov/nchs/nhanes/index.htm*) Knowledge and experience in statistical software packages such as Stata, SAS, or R will be necessary.

Contact: Tala Fakhouri, *tfakhouri@cdc.gov*

The National Center for Health Statistics (NCHS)

Hyattsville, Maryland

Positions: Multiple

Type of Student: Master's or PhD student; US citizens or noncitizens with permanent residency

Deadline: Three months before start date

Visit *www.cdc.gov/nchs/about/employ.htm*. We are looking for fellows in the field of epidemiology, health science, statistics, and/or social science.

Contact: NCHS Recruitment, *nchsrecruitment@cdc.gov*

The National Center for Health Statistics (NCHS)

Hyattsville, Maryland

Positions: Multiple

Type of Student: High-school, college, master's, or PhD student, US citizens or noncitizens with permanent residency

Deadline: Three months before start date

Gain educational and research experience at the nation's principal health statistics agency. Visit *www.cdc.gov/nchs/about/employ.htm*.

Contact: NCHS Recruitment, *nchsrecruitment@cdc.gov*

National Science Foundation's Mathematical Sciences Internship

Location: Varies – National laboratories nationwide

Positions: 40

Type of Student: PhD students

Deadline: February 1, 2018

This is a 10-week program for graduate students pursuing a doctoral degree in mathematics, statistics, or applied mathematics.

Applicants must be enrolled as a graduate student at an accredited US college or university and have a cumulative GPA of 3.30. Selected participants will receive a stipend of $1,200 per week and authorized travel allowance. Visit *https://orise.orau.gov/nsf-msgi*. Eligible candidates can submit applications at *www.zintellect.com/Posting/Details/3602*.

Novartis

East Hanover, New Jersey; Cambridge, Massachusetts; Fort Worth, Texas; Princeton, New Jersey

Positions: Multiple

Type of Student: Graduate, PhD

Deadline: January 31, 2018

Internship positions available for approximately 12 weeks (May to August; dates flexible).

Candidates must be enrolled in a graduate-level program working toward a PhD in biostatistics, statistics, or a related discipline and

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org*.

have completed at least 1.5 years of course work. Candidates must have excellent oral and written communication skills and strong problem-solving skills. Working knowledge of SAS is preferred, and some projects require a background in R.

Send CV and cover letter to *biostatistics.summerinternships@novartis.com*

Pfizer Inc.

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

Positions: 15

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

Deadline: February 23, 2018

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org.*

The internship will consist of up to 480 hours of work commencing as early as April and ending as late as December. The intern's project will be biopharmaceutically oriented, with one-on-one supervision. To apply, send application by email to Xun Lin *xun.lin@pfizer.com*.

Precision Bioassay, Inc.

Burlington, Vermont

Positions: 1–2

Type of Student: 2nd year or later PhD

Deadline: April 15, 2017

The job requires experience with R, mixed models, linear and nonlinear models, and at least one year of theory and one year of methods in statistics or a closely related field.

Visit *www.precisionbioassay.com.*

Applications should include a cover letter, résumé, and brief description of at least one consulting projects. Applications without a description of consulting projects will not be considered. Salary is competitive. There is a travel allowance.

Contact: David Lansky, *David@precisionbioassay.com*

QST Consultations, LTD

Allendale, Michigan

Positions: 2

Type of Student: Master's or PhD in statistics, or related field

Deadline: January 15, 2018

The internship is a 12-week program starting May 21, 2018. Ideal candidates are those who:

- Are pursuing a master's degree or PhD in statistics, or related field
- Have basic competency with SAS
- Have experience with Excel and Microsoft Office
- Have basic to advanced understanding of applied statistics
- Are interested in learning about clinical trials and the analysis and organization of the data
- Can commit to 40 hours per week for the summer in Allendale, MI

Send your résumé/CV and/or cover letter to Katie Everett at *keverett@qstconsultations.com.*

REsurety, Inc.

Boston, Massachusetts

Positions: 3

Type of Student: Undergrad/graduate

Deadline: Until filled

Wind Data Intern, Commercial Operations

- A passion for driving down the cost of energy from renewable sources
- Major in atmospheric science, meteorology, power systems engineering, or a related field
- Self-motivated and detail oriented, capable of executing complex analyses with little oversight

Full time during summer months, part time during school year. Duration: 10+ weeks. Send a cover letter and résumé to Adam Reeve, *areeve@resurety.com*

Data Engineer Intern

- 1+ years of experience directly related to the key responsibilities above
- Experience with R (secondary preference for MATLAB/Python)
- Experience with Linux systems and bash command line and basic knowledge of networking
- Experience with ETL applications
- Major in computer science, electrical engineering, or a related field

Part time: ~20 hours per week.
Duration: 10+ weeks

Send a cover letter and résumé to Christian Rivero, *crivero@resurety.com*

Engineering Software Intern

- Experience with R
- Knowledge of modeling, simulation, or data science
- Major in computer science, engineering, statistics, applied math, or a related field

Part-time: 20 hours per week

Duration: 10+ weeks

Send a cover letter and résumé to Karl Critz, *kcritz@resurety.com*

Sanofi US Inc.

Bridgewater, New Jersey

Positions: Multiple

Type of Student: PhD candidates in statistics or biostatistics

Deadline: February 5, 2018

Candidates must have completed at least two years of graduate course work and be working on a dissertation toward a PhD in statistics or biostatistics.

Email résumé and unofficial graduate transcript to Myrna Roberts, *Myrna.Roberts@sanofi.com*

SAS Institute Inc.

Cary, North Carolina

Positions: 2

Type of Student: PhD students studying in the US who have completed at least two years of graduate work by the end of the spring semester 2018

Deadline: January 31, 2018

We are interested in candidates with research experience in computational aspects of one of the following areas: Bayesian modeling; causal inference methods; complex survey methods; joint modeling; latent variable models; missing data methods; nonlinear mixed models; sparse methods for high-dimensional modeling; structural equations modeling; or survival analysis.

The program provides a salary and stipend for a 12-week internship at SAS headquarters in North Carolina, during the summer of 2018.

Apply *sas.com/summerfellowships*.

You must also ensure that two faculty members from your graduate program send a letter of recommendation via PDF to *SASFellows@sas.com* by January 31, 2018.

Contact: *SASFellows@sas.com*

Summer Institute in Biostatistics (SIBS)

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

Positions: Up to 25 at each site

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

Deadline: Early March 2018

The program will be offered at six sites in the summer of 2018. Applications should be made to each program site separately:

NHLBI
www.nhlbi.nih.gov/funding/training/redbook/sibsweb.htm

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

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

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

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

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

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

Social and Decision Analytics Laboratory, Biocomplexity Institute of Virginia Tech National Capital Region

Arlington, Virginia
Positions: 4+
Type of Student: Graduate, PhD
Deadline: January 31, 2018

Details about the DSPG program and application information can be found at *www.bi.vt.edu/sdal/projects/data-science-for-the-public-good-program*.

The online application will request a résumé, transcript, cover letter stating why this internship is of interest to you, and two reference letters.

Takeda Pharmaceuticals, Inc.

Cambridge, Massachusetts

Positions: Multiple

Type of Student: PhD

Deadline: Open until all positions filled

Candidates must be enrolled in a PhD statistics program (which includes biostatistics, bioinformatics, and mathematics programs with an emphasis on statistics).

Candidate PhD students must have passed qualification exams.

Interns will give a presentation at the end of the program.

Contact: Intern Coordinator, *biostatistics.intern@takeda.com*

Travelers

Hartford, Connecticut; St. Paul, Minnesota

Positions: 25

Type of Student: MS, PhD

Deadline: February 2018

This 10–12-week program allows students to acquire advanced analytical experience. Primary responsibilities include:

- Working in a collaborative environment, providing recommendations to management on projects that deal with advanced analytical concepts
- Designing and building statistical models at the right level of complexity to produce relevant results for the business
- Identifying, integrating, and structuring complex data flows
- Identifying new opportunities for analytic solutions
- Validating, manipulating, and performing data analysis tasks
- Providing qualitative and quantitative data support to ensure accuracy of metrics

Contact: *www.travelers.com/careers* - Job Posting Number 12695BR; Kathy Ziff, *kziff@travelers.com*

Undergraduate Research Program in Statistical Genetics

Sioux Center, Iowa
Positions: 5–6
Type of Student: Undergraduate
Deadline: January 31, 2018

Applicants will work with a team of other students on problems in statistical genetics leading to publication in journals and presentations at conferences.

Visit the website at *www.dordt.edu/statgen* for information.

Participants will receive a $4,000 stipend for the ~eight-week program, which runs from June 6 to July 27, 2018. Free apartment-style housing and funds for travel to/from Iowa, will be provided.

Applicants must be US citizens.

Contact: Nathan Tintle, *statgen@dordt.edu*

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

University of Arkansas for Medical Sciences/ Arkansas Children's Research Institute—Dept. of Pediatrics

Little Rock, Arkansas

Positions: 1–2

Type of Student: Graduate

Deadline: January 30, 2018

Candidates must be enrolled in a graduate program at an accredited institution leading to a master's or PhD in statistics or biostatistics. Candidates must have had a minimum of two full semesters of graduate-level statistics courses or equivalent prior to starting their summer internship and must be returning to school in fall 2018. Candidates must have a strong statistical/methodological background, strong analytical skills, the ability to work under minimum supervision, ability to work in a team, and excellent communication skills. Experience with SAS/R/STATA is highly preferred.

To apply, complete the survey at *https://base.uams.edu/redcap/surveys/?s=RC3HJTTRHL.*

MORE ONLINE
Find full descriptions for these internships on STAT*tr@k* at *http://stattrak.amstat.org.*

University of Pennsylvania

Philadelphia, Pennsylvania

Positions: Multiple

Type of Student: Undergraduate

Deadline: February 1, 2018

The Summer Undergraduate Internship Program (SUIP) and Summer Undergraduate Minority Research (SUMR) program are accepting applications for undergraduate students to participate in summer research.

SUIP is a 10-week program from early June to mid-August.

Applicants may apply at *www.med.upenn.edu/suip*. Application deadline is February 1, 2018.

The SUMR program will run for 12 weeks from May 29 through August 17. The application deadline is February 1, 2018. Application details may found at *https://ldi.upenn.edu/sumr/application.*

US Census Bureau, Data Science Fellows

Suitland, Maryland

Positions: Multiple

Type of Student: Recent graduates and current students with experience doing predictive modeling or machine learning using large, unstructured, and "dirty" data sets

Deadline: Quarterly rolling deadlines (November, February, May, August)

Fellows may be eligible for two-year positions, which may be extended to four years. Fellows are not eligible for non-competitive conversion.

Contact: *www.census.gov/about/census-careers/opportunities/programs/student.html*

University of Pennsylvania

Philadelphia, Pennsylvania

Positions: 1

Type of Student: Graduate or Undergraduate

Deadline: May 1, 2018

The intern will work under the close guidance of an experienced statistician. Candidates should be available to meet at least once per week. Self-motivated and disciplined candidates are required for this position.

This opportunity may turn into a paid and/or permanent position.

Contact: Jesse L. Chittams, *chittams@upenn.edu*

US Census Bureau, Pathways Internship

Suitland, Maryland

Positions: Multiple

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

Deadline: February 2018

Interns *may* be converted to a permanent position within 120 days of successful completion of the program. To be eligible for conversion, interns must do the following:

- Complete at least 640 hours of work experience acquired through the internship program
- Complete their degree or certificate requirements
- Meet the qualification standards for the position to which the intern will be converted
- Meet agency-specific requirements as specified in the participant's agreement
- Have a performance rating that is "fully successful"

Contact: Pathways Program Coordinator, *jennifer.a.avant@census.gov*

USDA/Economic Research Service

Washington, DC

Positions: 20–25 (summer internship only; not to exceed September 30, 2018)

Type of Student: Economics - undergraduate, master's, and PhD candidate; Information Specialist - undergraduate and master's

Deadline: February 2018

Multiple grade levels for economics: These positions require individuals with a foundation in economic theory and quantitative skills.

Multiple grade levels for information specialist: The student will focus on installing and configuring the agency's operating system, software installation and updates.

These positions are for the summer only. The student can start working in May and work until September 30, 2018. Jobs are announced via *USAJobs.gov* only. Résumés and transcripts will not be accepted at the agency. ■

DEPARTMENT OF POPULATION AND QUANTITATIVE HEALTH SCIENCES

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Internship

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MONTHLY WEBINARS ON PROGRAM

http://epbiwww.case.edu/ms-biostatistics

MORE INFO?

ms-biostatistics@case.edu

Educational Ambassadors from Pakistan, Thailand, Vietnam Sought

The ASA Committee on International Relations in Statistics is seeking qualified nationals from Pakistan, Thailand, and/or Vietnam to serve as 2018 Educational Ambassadors (*www.amstat.org/ASA/Education/Educational-Ambassador.aspx*). New in 2018, the ASA will select two educational ambassadors to receive funding to attend the Joint Statistical Meetings and take one or more continuing education (CE) courses in an emerging area of research. The ambassadors will then return to teach the subject matter in their home country and/or region.

The nomination deadline is December 31.

Selected ambassadors will be expected to complete the following by December 2019:

- Attend the 2018 Joint Statistical Meetings in Vancouver, BC, Canada, to take CE courses in an emerging area of statistics research (view CE courses offered in 2017 at *ww2.amstat.org/meetings/jsm/2017/ce.cfm*).
- Return to their home country and, within the next year, teach a one-semester master's-level class with no fewer than 10 students on the subject matter of the CE course and write lecture notes in the language locally deemed most appropriate. Ambassadors will need to repeat the class the following semester. (The committee understands there can be practical and organizational considerations that make it difficult to meet this requirement. Should these arise, the committee is prepared to work with the ambassadors to devise an alternative plan. The ASA will also investigate the possibility of providing further assistance through recorded webinars related to the CE course material.)
- Submit a report by December 2019 to the ASA through the Committee on International Relations in Statistics and the ambassador's home institution describing how the transfer of knowledge was accomplished and how the ambassadors invited statisticians from their country to work with them on the subject matter of their course.

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

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

Interested candidates should send the following to committee chair Geert Molenberghs at *geert.molenberghs@uhasselt.be*:

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

JSM 2018: Contribute to the Program

Christian Léger, JSM 2018 Program Chair

In 2018, one of the largest statistical events in the world will take place in Canada. The 2018 Joint Statistical Meetings (JSM) will be held in Vancouver, British Columbia, from July 28 to August 2. The theme for the meeting is "#LeadWithStatistics," promoting the idea that using statistics in the right way will improve any leaders' chances of success, including the new generation of statisticians and data scientists who will become the future leaders of our field.

Thanks to your efforts and those of the JSM 2018 Program Committee, the invited program is almost complete. The 181 invited sessions will cover a wide spectrum of applied and theoretical topics to address spatiotemporal, multi-omics, and various other types of complex data via Bayesian, nonparametric, machine learning, or many other types of statistical methodology with applications to medicine, government, sports, and other areas. It will also feature a number of sessions about important policy issues relevant to our profession.

The process leading to the selection of the 181 invited sessions was competitive, with many good sessions having to be left out (fewer than half the proposals could be accepted). But there are still many ways in which you can get on the JSM 2018 program.

Speed Sessions

A speed presentation is a four-minute oral presentation advertising an electronic poster (e-poster) that will be presented in a later session. A speed session consists of 20 oral presentations with a five-minute break after the first set of 10 talks.

The idea is that the oral presentation hits the main point of the work to pique interest, and then the e-poster—lasting 45 minutes—provides an opportunity to present details customized to the interests and backgrounds of the viewers.

The best speed session presentations do not try to squeeze too much information into the four-minute oral presentation, but just enough to give the big picture and attract viewers to the e-posters.

Speakers are invited to use their creativity to get their message across by using the greater flexibility offered by the electronic nature of the presentation, such as video files and software demonstrations. In fact, it is not a good idea to prepare a "regular" poster, given that the e-poster is shown on a screen, rather than a large poster board. It also frees you from the hassle and cost associated with printing or transporting a poster.

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

Poster Sessions

In many fields, the main way to present research is through a poster. Statisticians should consider presenting a poster at JSM. It allows face-to-face extended discussion with individuals or small groups interested in the topic, providing researchers with more direct feedback than is typically possible with a contributed paper talk. I strongly encourage you to consider this format.

Yang Ni of The University of Texas at Austin presents his poster to a JSM 2017 attendee in Baltimore, Maryland.

Don't miss your chance to be part of one of the largest statistical events in the world!

The JSM 2018 program committee is accepting abstracts based on the theme #LeadWithStatistics through February 1, 2018 (11:59 p.m. EST). *ww2.amstat.org/jsm*

Contributed Sessions

Contributed paper sessions consist of seven papers with 15 minutes of presentation time for each, including the introduction of the speaker and questions. Although this is still the preferred way to present research for many JSM participants (nearly half of JSM sessions are contributed sessions), the short duration of the talks, relative difficulty interacting with the audience, and large number of parallel sessions should lead many researchers to consider trying a speed session or poster session.

Topic-Contributed Sessions

For the previous modes of presentation, a participant simply submits a title and abstract by the deadline (see below) and several presentations are put together into cohesive sessions by the JSM 2018 Program Committee. But if you can put together five speakers on a common theme—either five papers or four papers with one discussant—then you can submit a proposal for a topic-contributed session.

Topic-contributed sessions are allocated on a competitive basis, however, and each ASA section, committee, interest group, or partner society (ENAR, WNAR, IMS, SSC, ICSA, IISA, KISS, ISBA, RSS, or ISI) has a limited number of them. So, before submitting a proposal to a section or society, organizers are invited to get in touch with their JSM 2018 Program Committee members to let them know of their interest.

Because of the selection process, topic-contributed sessions are often more cohesive than regular contributed paper sessions and feature high-quality papers. The advantage is that each speaker has 20 minutes of presentation time, instead of 15 minutes. Organizers must select a theme, invite five speakers, and ensure speakers' commitments prior to the submission deadline of January 11, 2018.

Abstract Submission

The online abstract submission system will close February 1, 2018. This deadline is firm, so please submit your title and abstract ahead of time. To ensure a well-organized program, speakers must register for JSM when they submit their abstracts. Whether you submit an abstract for a speed session, poster session, or contributed session, you have to provide the choice of the ASA section or JSM partner society most closely associated with the topic of your paper (topic-contributed sessions will have been selected by a section or society). The system will be reopened for abstract editing from March 29 to April 18, 2018.

Session Chairs

All JSM sessions require a chair to ensure speakers are well informed about the session in advance, introduce speakers, and manage time for each speaker. Chairing a session is a great way to get involved with JSM and network with other professionals in your field. I especially encourage people who are new to the profession to consider chairing sessions by volunteering to the program committee members of their section or society (see *ww2.amstat.org/meetings/jsm/2018/programcommittee.cfm*).

Finally, I hope you will participate in JSM 2018 at the beautiful Vancouver Convention Centre. Its success depends on your involvement. I am glad to receive any feedback at *leger@dms.umontreal.ca.* ■

What I Learned at the Women in Statistics and Data Science Conference

Donna LaLonde, ASA Director of Strategic Initiatives and Outreach

"The Women in Statistics and Data Science (WSDS) Conference is a great venue for young, female statisticians like myself to build and strengthen connections." ~ *Comment from a graduate student who attended WSDS*

Donna LaLonde

Photos by ASA Graphic Designers Sara Davidson and Meg Ruyle

A young colleague who was not able to attend the Women in Statistics and Data Science conference (WSDS) asked me about it, which made me reflect on my experiences. In this recap, I want to share what I learned. Of course, I want to know what you learned, so please send your comments to me or add comments online.

The keynote address was given by **Donna Jean Brogan**, and the plenary talks were presented by **Susmita Data, Jeri Mulrow**, and **Bonnie Ray**. Susmita Datta presented the opening plenary and, through sharing her story, highlighted the themes of the conference—knowledge, influence, and community.

During her talk, Jeri Mulrow showed a slide indicating her career path had been nonlinear, which generated laughter and applause. She went on to encourage the audience to "know where you fit."

At the celebration banquet, Donna Brogan described her life of learning and encouraged us to do the same. And as the conference's closing plenary, Bonnie Ray's talk, "Questions I Should Have Asked," provided excellent advice for making career choices.

From the different paths pursued by these talented women, *I learned that a productive career is a mix of successes, challenges, compromises, and definitely a willingness to take risks.*

Members of the conference's executive committee worked tirelessly to plan the conference program and coordinate the travel awards. Throughout the conference, these women continued to focus on ensuring a positive conference experience for all participants. *I learned that my talented colleagues are exceptional multi-taskers, generous with their time and energy, and committed to celebrating women in statistics and data science.*

"I'm always more excited than nervous to give talks because I'm so interested in how well the material I prepare will be received." This comment was shared with me from one of the 2017 Travel Award recipients. I suspect it captures the feelings of all the presenters, regardless of their career stage.

Again this year, the more than 400 conference participants had the opportunity to attend technical and professional development presentations, panel presentations, and speed sessions. Presentations included "Statistics in the Courts" by **Alicia Laura Carriquiry,** "Visualization of Large-Scale Simulations for Scientific Discovery" by **Joanne R. Wendelberger,** "Move Out of the Comfort Zone and TextM for Crowdsourcing" by **Jiayang Sun,** and "Navigating Minefields to Claim the Right to Exercise Creative Thinking" by **Nancy Flournoy.**

A range of issues were also explored during invigorating panels, including "Call Her Madam President: A Discussion with Women Leaders in the Statistics Community," moderated by **Kim Sellers** with panelists **Scarlett Bellamy, Anne Lindblad,** and **Nalini Ravishanker**, and "'Too Young' to Lead … but Stepping Up Anyway: Shifting the Leadership Pendulum in (Bio)Statistics and Data Science," moderated by **Emma Benn** with panelists **Leslie Ain McClure, Merlise A. Clyde, Dionne L. Price,** and **Elizabeth A. Stuart.** The complete program is available at *https://goo.gl/Z8Sa9A.*

Jeri Mulrow of the Bureau of Justice Statistics answers questions after her talk: "Statistical Leadership in the Federal Govenment"

Dalene Stangl gives her concurrent session talk, "Power Dynamics in the Classroom: The Influence of Gender and Consequences for Promotion."

Hackathon participants

Tag Yourself!

Throughout the conference, we asked attendees to describe in a word or two—or 12—what WSDS means to them. Visit the ASA's Facebook page at *https://goo.gl/gMvK4j* to view all the photos. Take a look, and please tag yourself!

In addition to the formal program, participants had the option of participating in a pre-conference short course. This year, the courses were Calibrating Your 'GPS' (Growth in Professionalism - Strategies), taught by **Rochelle Tractenberg,** and Writing R Functions for Fun and Profit, taught by **Jenny Bryan**. *From all the amazing presentations and the informal conversations, I learned a lot!*

The first WSDS hackathon for service focused on the problem of human trafficking. Planning for the hackathon began shortly after WSDS 2016, with **Samantha Chiu** contributing many hours to its development. Of course, the sponsorship from Microsoft, including T-shirts, was great. The teams presented their work during the closing session, and the audience affirmed that the projects were amazing.

Lucy D'Agostino McGowan, Mine Dogucu, and **Jacquelyn Neal** scraped the web to present a preliminary analysis of the California legislature's efforts related to human trafficking.

The team of **Nada Abdalla, Jingchen Hu, Yongmei Huang, Priya Kohi,** and **Yun You** completed a preliminary analysis of trafficking trends by country and prosecutions by year.

Building on their backgrounds in econometrics, **Jessica Dutra** and **Fulya Ozcan** completed a preliminary analysis of human trafficking as repugnant markets.

The team from NC State harnessed Twitter data to inform anti-trafficking policy. Team members **Katherine Allen, Iris Bennett, Jocelyn Cui, Lili Wu,** and **Joyce Yu** developed a website (*www4.ncsu.edu/~jtchi/wsds2017*) as part of their project.

Aziza Salako, competing in her first hackathon, presented her project investigating the potential connection between child homelessness and trafficking.

Everyone agreed all the entries were "winning," so each team will designate an organization and a donation will be made in its name. *I learned first attempts can exceed expectations and set a high bar for future events.* ■

Brava!

We have video (this conference was our pilot for livestreaming talks) to celebrate WSDS 2017. Visit the ASA's (@AmstatNews) web page on Periscope to view the talks: *www.pscp.tv/AmstatNews/1ZkKzdPOXRvJv.*

Asian Initiative Workshop Concludes with Sage Advice

Amarjot Kaur, David Morganstein, Cyrus Mehta, Tony Cai, Donsig Jang, Barry Nussbaum, and Donna LaLonde

"Coming together is a beginning; keeping together is progress; working together is success."

— Henry Ford

During the 2017 Joint Statistical Meetings (JSM) in Baltimore, the American Statistical Association, International Indian Statistical Association (IISA), International Chinese Statistical Association (ICSA), and Korean International Statistical Society (KISS) organized a workshop on career development and leadership skills. The workshop was organized by the taskforce created under ASA President Barry Nussbaum's initiative to identify ways the societies could collaborate to identify and address distinctive needs and concerns of Asian statisticians and to help enhance their professional growth.

The workshop was successful in providing an opportunity to interact with and learn from the leaders who are passionate about the development of Asian statisticians. The keen interest of the audience of more than 30 was exemplified with their active participation, leaving no time for the prepared questions. And that was great!

The distinguished panelists, representing all four societies, included David Morganstein from Westat and former ASA president, Cyrus Mehta from Cytel and former IISA president, Tony Cai from the University of Pennsylvania and current ICSA president, and Donsig Jang from NORC at the University of Chicago and KISS president-elect. The discussion was moderated by Amarjot Kaur from Merck Research Labs and past-president of IISA. Nussbaum made the opening remarks and provided motivation behind the initiative.

Topics Considered

The statistical leaders' diverse backgrounds affected their own professional experiences, challenges, and ability to overcome cultural barriers. They discussed unique challenges they encountered due to different cultural backgrounds and communication skills and the approaches they took to overcome them, professional benefits of working with statisticians with diverse backgrounds, and the important skill set of Asian statisticians and potential areas of improvement.

Morganstein provided his perspective as a native speaker during both his interactions with family members from Asia and colleagues at Westat. He emphasized communication skills and networking and shared solutions to overcome barriers, such as joining in ASA and other society activities. Cai focused on new researchers in academia and gave practical advice for research and journal publications based on his experience as past editor of the *Annals of Statistics.* Mehta emphasized presentation and leadership skills that are fundamental to entrepreneurship. He brought in the perspective of Cytel employees. Jang emphasized collaborative skills and that clients define the true value of statisticians. He also described various career stages of the Asian statistician. Kaur weighed in on communication and leadership skills and shared anecdotes from her journey.

Typically, the early struggle for Asian statisticians includes language and cultural barriers, along with the general fight for survival.

Sage Advice

Volunteer Your Time

- Join committees of statistical societies.
- Organize sessions at conferences.
- Show up at other peoples' presentations.
- If chairing sessions, prepare questions in advance.
- Look for apprenticeships and internships.

Find a Mentor and Network

- Get involved in professional societies.
- Find a local mentor. Receiving mentoring and reinforcement from senior members of the profession helps.

Learn to Communicate

- Talk in English at professional meetings, especially when other colleagues do not speak your native language.
- Socialize with locals
  —Don't hang out solely with colleagues from 'back home.'
- When English is not the mother tongue, focus on the following:
  —Accent reduction, while acknowledging that good communication is not merely accent reduction
  —Writing style; join writing workshops
  —Logical presentation
- Give talks

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—Seek feedback.
—Practice and do dry runs.
- Write papers
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—Speak up at meetings.
—Know when to intervene.
—Overcome a sense of inferiority.
—Realize that technical prowess alone is not sufficient.

Partner with Colleagues and Collaborate
- Partner with colleagues whose knowledge and skills complement your own.
- Be a team player.
- Be willing to let go of control.

Publication Pointers
- Do a good job writing your manuscript. Make sure the submission version is of good quality.
- Pay attention to the referees' comments and follow up thoughtfully when responding to journal comments.
- The good effort of authors does eventually get noticed.

Imbibe the Culture and Socialize
- Read novels.
- Watch movies and sports.
- Go to mixers and parties.

Other Professional Tips
- Have passion for your profession.
- Understand the big picture and be willing to help outside of your roles/assignments for the quality of the end product.
- Approach your assignments as if quality of the end product is up to you.
- Develop a keen understanding of your value in the appropriate context (whether methods or technology).
- Mange your time well.
- Develop good judgment
- Know what you know and what you don't.

All these activities can help build confidence, develop social and presentation skills, and increase the chances of finding the right path toward your professional goals.

Looking Forward

Statistical societies such as the ASA provide encouragement to young statisticians by offering opportunities to network and enhance statistical skills when attending conferences, workshops, and other statistical activities. Determining the specific needs of statisticians with an Asian background is an important first step to paving the way for further discussion and development of future statistical leaders.

The 'Asian Initiative' taskforce led by Morganstein included two members each from the four societies (ASA, IISA, ICSA, and KISS). They identified several actions that might enhance further growth of Asian statisticians. Two broader areas of early action include career development and leadership skills training and increased involvement of Asian statisticians with the ASA committees.

This workshop was the first step toward career development and leadership skills training, and there are plans to offer such workshops at future ASA-sponsored conferences such as the Conference on Statistical Practice. The taskforce will continue to evaluate the effectiveness of the planned activities. If you have additional ideas for the taskforce to consider, contact Morganstein at *davidmorganstein@westat.com*, Kaur at *amarjot_kaur@merck.com*, or Donna LaLonde at *DonnaL@amstat.org*. ■

This workshop was organized by the Asian Taskforce Sub-Team on Workshops to Support Professional Development: Seonjin Kim, Amarjot Kaur, Mei-ling Ting Lee, David Morganstein, and Donna LaLonde.

2017 SPAIG Award Winners Announced

Fanni Natanegara of Eli Lilly and Company, Willis Jensen of WL Gore and Associates, and Ying Ding of the University of Pittsburgh on behalf of the ASA SPAIG Committee

Established in 2002, the SPAIG Award highlights outstanding partnerships among academe, industry, and government organizations. It also promotes new partnerships among these organizations. This award is distinct from other ASA awards in that it recognizes outstanding collaborations between organizations, while recognizing key individual contributors.

After a few years of hiatus, the SPAIG (Statistical Partnerships Among Academe, Industry, and Government) Committee received a number of high-quality nominations in 2017. Two awards were selected; both have equally demonstrated outstanding partnership across two or more sectors.

Award #1: National Science Foundation-Census Research Network (NCRN)

NCRN has addressed methodological questions of interest to the federal statistical system and is training future generations to design, conduct, analyze, and report official statistics. Established in 2011 in partnership with the National Science Foundation (NSF), NCRN is a highly effective, innovative academic-government partnership involving eight academic institutions, their partners from other universities, and the US Census Bureau. This partnership provides support for a set of research nodes, each of which is staffed by teams of researchers conducting interdisciplinary research and educational activities on methodological questions of interest and significance to the research community and federal statistical system.

Direct collaborations with the US Census Bureau have resulted in applied solutions to existing problems. For example, collaborations between the agency, Cornell, and Duke University researchers have advanced the agency's ability to produce synthetic business data, enabling our public-use access to microdata without compromising confidentiality.

In terms of the productivity and impact of NCRN, Sarah Nusser, vice president for research and professor of statistics at Iowa State University, said, "[Productivity] has been impressive, including many publications in high-impact journals and statistical software (such as R packages) that are publicly available. In addition, many students have been trained in critical methodological areas, and the program has created a robust source of new talent much needed by US statistical agencies."

In support of this nomination, John Thompson, director of the US Census Bureau, said, "I believe the NSF Census Research Network has helped bridge the gap between statistical practice and theory. It has also shown how important the integration of other disciplines—such as information science, computer science, and modern geo-spatial science—are to the work we do."

This collaboration has won the SPAIG Award due to its broad impact due to many NCRN research activities over the past six years. The SPAIG Committee was impressed by the diverse achievements, including the novel method that significantly improves the accuracy of the tabulations from the Economic Census, production of synthetic business micro-data sets, and effective training of the next generation of statisticians. As evidenced by strong letters of support, the NCRN was an innovative collaboration that has had comprehensive benefits for students, researchers, and the broader statistical community. Key contributors include the following:

Robert Groves, Georgetown University

Myron Gutmann, University of Colorado

Cheryl Eavey, National Science Foundation

Daniel Weinberg, DHW Consulting

Matthew D. Shapiro on behalf of the University of Michigan

Bruce Spencer on behalf of Northwestern University

Lars Vilhuber on behalf of Cornell University

Jerome P. Reiter on behalf of Duke University

Scott H. Holan on behalf of the University of Missouri

Kristin Olson on behalf of the University of Nebraska - Lincoln

William Eddy on behalf of Carnegie Mellon University

David Folch on behalf of the University of Colorado/University of Tennessee

Award #2: Laboratory for Analytical Sciences (LAS)

Led by the National Security Agency (NSA) and North Carolina State University (NCSU), LAS partners broadly across academia, industry, and government to apply quantitative methodology and data science to improve national security.

The LAS, established in 2013 on the NCSU campus, was conceptualized as a ground-breaking initiative for the NSA—the establishment of a research center at a university that would conduct classified and unclassified research on new technologies and tradecraft that would help intelligence analysts solve future big data intelligence problems.

What makes the initiative at LAS unique is its ability to do the following:

- Establish academic-industry-intelligence experts on research teams and have them work collaboratively to design and develop big data innovations of interest to the intelligence community (IC) in the US, Canada, and UK over a multi-year period
- Co-locate research, technical, and mission staff from the IC to work together on these teams
- Integrate science, technology, social science, business, and humanities expertise to create a truly interdisciplinary research program at the lab
- Do this work in a largely unclassified setting

Each year, the LAS conducts about 30 projects. Recent projects include an adversarial risk analysis of the security of a water distribution system; topological data analysis to discover suspicious patterns of transportation behavior at public events; and a combination of sentiment analysis, network modeling, and topic modeling applied to political blogs to study polarization.

Highlighting the international collaboration is D'Arcy Walsh, science adviser of the Canadian Communications Security Establishment (CSE). He said, "Through the LAS collaboration model, there has been a two-way relationship supporting the work of graduate students in both Canada and the United States. Through VENUS (Virtual Environment for Networks of Ubiquitous Security), the LAS commissioned graduate students in Canada to investigate cyber safety concerns related to the convergence of operational technology and information technology, machine learning, and open-source systems engineering initiatives. To complement planned LAS investments, CSE commissioned graduate students in the United States to investigate online privacy, cyber training, and anticipatory thinking linked to smart cities."

The breadth and depth of the projects LAS has collaborated on from May 2013 to early 2017 are both impressive and impactful. By late 2016, 52 government research, technical, and mission staff members were at LAS to work with 11 industry partners and 42 professors and their students from 11 universities.

Different organizations across multiple countries provided strong support as part of the nomination package. The SPAIG Committee was also impressed by the extensive and diverse nature of LAS, such as the engagement of many kinds of scientists, the massive embedding of NSA personnel with academic and industry researchers, and the widespread appearance of LAS research outputs in statistical and other journals and professional meetings. Key contributors include the following:

Alyson Wilson, North Carolina State University

Michael Bender, Laboratory for Analytic Science

Forrest Allen, North Carolina State University

Kay Moore, Laboratory for Analytic Science

David Harris, Department of Defense ■

Nominations for the 2018 SPAIG Award are due March 1, 2018. Visit *https://goo.gl/y6NRyt* for nomination forms and selection criteria.

Ellis R. Ott Scholarship

The Statistics Division of the American Society for Quality is offering $7,500 scholarships to support students enrolled in or accepted into a master's degree or higher program with a concentration in applied statistics and/or quality management. This includes the theory and application of statistical inference, statistical decision-making, experimental design, analysis and interpretation of data, statistical process control, quality control, quality assurance, quality improvement, quality management, and related fields. Studies must take place at US or Canadian institutions; online programs are excluded.

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

During the last 20 years, scholarships totaling more than $300,000 have been awarded to 54 students. Last year's scholarship winners are Ruth Sirkin of North Carolina State University in the MS category and Claire Kelling of The Pennsylvania State University in the PhD category.

Application instructions and forms can be downloaded from the statistics division website at *http://asq.org/statistics/about/awards-statistics.html*. Forms for the 2018–2019 academic year will be accepted until April 1. For more information, contact Lynne B. Hare at *lynne.hare@comcast.net.* ■

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

AWARD	DEADLINE	NOMINATIONS	QUESTIONS
COPSS Presidents' Award	January 15, 2018	*http://bit.ly/2y9MWPi*	
COPSS F.N. David Award	January 15, 2018	*http://bit.ly/2y9MWPi*	
COPSS Snedecor Award	January 15, 2018	*http://bit.ly/2y9MWPi*	
ASA Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society	February 1, 2018	*awards@amstat.org*	**Paul S. Albert** *albertp@mail.nih.gov*
ASA W. J. Dixon Award for Excellence in Statistical Consulting	February 1, 2018	*awards@amstat.org*	**Frank Harrell** *f.harrell@vanderbilt.edu*
ASA Causality in Statistics Education Award	February 15, 2018	*educinfo@amstat.org*	*educinfo@amstat.org*
ASA Harry V. Roberts Statistical Advocate of the Year Award	February 15, 2018	*awards@amstat.org*	**Pandurang Kulkarni** *kulkarni_andurang_m@lilly.com*
ASA Samuel S. Wilks Memorial Medal	February 15, 2018	*awards@amstat.org*	**Steven G. Heeringa** *sheering@isr.umich.edu*
ASA Waller Distinguished Teaching Career Award	February 15, 2018	*awards@amstat.org*	**Bradley A. Hartlaub** *hartlaub@kenyon.edu*
ASA Waller Education Award	February 15, 2018	*awards@amstat.org*	**Bradley A. Hartlaub** *hartlaub@kenyon.edu*
ASA W. J. Youden Award in Interlaboratory Testing	February 15, 2018	*awards@amstat.org*	**Blaza Toman** *blaza.toman@nist.gov*
ASA Statistics in Physical and Engineering Sciences Award	February 20, 2018	**Ming Li** *mli@alumni.iastate.edu*	**Ming Li** *mli@alumni.iastate.edu*
ASA Gertrude M. Cox Scholarship	February 23, 2018	*awards@amstat.org*	**Eloise E. Kaizar** *ekaizar@stat.osu.edu*
ASA Edward C. Bryant Scholarship	March 1, 2018	*awards@amstat.org*	**Jill (Montaquila) DeMetteis** *JillDematteis@westat.com*
ASA Excellence in Statistical Reporting Award	March 1, 2018	*awards@amstat.org*	**Alan R. Tupek** *alan.tupek@gmail.com*
ASA Fellows	March 1, 2018	*www.amstat.org/awards*	**Paul Gallo** *paul.gallo@novartis.com*
ASA Mentoring Award	March 1, 2018	*awards@amstat.org*	**Barry Nussbaum** *statisticsbarry@gmail.com*
ASA Outstanding Statistical Application Award	March 1, 2018	*awards@amstat.org*	**Jung-Ying Tzeng** *jytzeng@stat.ncsu.edu*
Statistical Partnerships among Academe, Industry, and Government (SPAIG) Award	March 1, 2018	*awards@amstat.org*	**Kelly Zou** *Kelly.Zou@pfizer.com*
ASA Founders Award	March 15, 2018	*awards@amstat.org*	**Barry Nussbaum** *statisticsbarry@gmail.com*
ASA Biopharmaceutical Section Scholarship Award	March 15, 2018	*http://bit.ly/2kBDPUg*	

Bani K. Mallick, distinguished professor and Susan M. Arseven Chair of Statistics at Texas A&M, has been selected to receive a Fulbright Distinguished Chair for the 2017–2018 year.

Fulbright Distinguished Chair Awards are viewed as among the most prestigious appointments in the Fulbright Scholar Program. Only about 40 awards are given globally each year to eminent scholars who have a significant publication and teaching record.

Mallick has been recognized with the Fulbright-Nehru Distinguished Chair, named to honor his host country India and its first prime minister, Jawaharlal Nehru. As part of the chair, he will spend four months later this year conducting research and lecturing at institutes across India on big data cancer research, which he specifically selected. ■

Stanford University's **Emmanuel Candès**, the Barnum-Simons Chair in Mathematics and Statistics, has been named a MacArthur Fellow. The prestigious recognition is a five-year grant to individuals who show exceptional creativity in their work and the prospect for still more in the future. It is designed to provide recipients with flexibility to pursue their own artistic, intellectual, and professional activities without specific obligations or reporting requirements.

One of 24 recipients in the class of 2017, Candès is recognized for exploring the limits of signal recovery and matrix completion from incomplete data sets with implications for high-impact applications in multiple fields. His research focuses on reconstructing high-resolution images from small numbers of random measurements, as well as recovering the missing entries in massive data tables. At the interface of applied and theoretical mathematics, his work is generating new lines of research in information theory, as well as laying the groundwork for improvements in many devices that make use of signal and image processing methods.

Read more about Candès and the MacArthur award winners at *https://goo.gl/kw5cVq*. ■

On October 23, the department of biostatistics and bioinformatics in the Emory University Rollins School of Public Health presented the 2016 Kutner Distinguished Alumni Award to **Scott Clark,** senior director of statistics at Eli Lilly & Company, and the 2017 Kutner Distinguished Alumni Award to Brent Blumenstein, founder and president of TriARC Consulting. The award, given annually to a former graduate of the department, is for distinguished service to the discipline.

The event also honored the 40+-year exemplary Emory career of Kutner, Rollins professor of biostatistics. Lance Waller, Rollins professor and chair of the Emory Department of Biostatistics and Bioinformatics, served as the master of ceremonies. Invited speakers in addition to Waller included Rollins School of Public Health dean, James Curran; former department chair E.C. Hall; and senior executive associate dean for academic affairs Richard Levinson. John Neter, professor emeritus of the University of Georgia, and Fadlo Khuri, president of American University, Beirut, Lebanon, sent congratulatory letters.

Kutner, in his closing remarks, thanked all the speakers and attendees for their participation. He then gave a brief account of his most important and influential research projects while at Emory University and when he chaired the department of biostatistics and epidemiology at the Cleveland Clinic Foundation (1994–1999). ■

Students Experience Summer of State-of-the-Art Data Science Research

From left: Ellen Kulinsky, University of California, Berkeley; Sastry Pantula, Oregon State University; Aaron Huang, University of Washington; Betsy Hensel, University of Virginia; Shelby Taylor, Brigham Young University
Photo by Megan Griffiths

Oregon State University was chosen by the ASA as one of three REU sites this past summer and hosted students from across the country from June 19 until August 25. The four REU participants were selected from more than 100 applicants in a highly competitive process.

To read more about the students and their experience, visit OSU's website at *https://goo.gl/peCxus*.

Tennessee Chapter Introduces High-School Students to Statistics

Dale Bowman (left), who led the program, watches Yu Jiang speak in front of high-school students during the West Tennessee Chapter Bring a Student to Work Day.

Jun Shi from the West Tennessee Chapter of the ASA speaks to students.

As part of a member initiative award from the ASA, members of the West Tennessee Chapter (WTASA) and graduate students in statistics at the University of Memphis visited Central High School and White Station High School on consecutive Fridays in October to host several sessions designed to introduce local high-school students to the many opportunities in the field of statistics.

The initiative consists of the following two parts:

- Working statisticians visit local classrooms to share information about statistics careers and their experiences being a statistician
- "Bring a Student to Work Day," in which WTASA statisticians are paired with interested students and invite the students to shadow them for a day or more

Hui Zhang, president of WTASA; biostatisticians at St. Jude Children's Research Hospital; Joyce Jiang, vice president of WTASA; biostatisticians in the school of public health at the University of Memphis; and Dale Bowman, chapter representative and assistant professor at the University of Memphis, visited statistics and applied math classes at the two high schools.

Also visiting were WTASA members Fridtjof Thomas from UT Health Science Center, Jun Shi from AutoZone, and Chris Pfeiffer from Tegra Analytics to share their experiences as working statisticians.

Graduate students in statistics at the University of Memphis Robert Vaughn, John Appiah Kubi, Yunusa Olufadi, Camden Harrell, and Andrew Ott were on hand to give a student's perspective of studying statistics beyond high school.

During the one-hour presentation, students had the chance to ask questions and interact with local statisticians and students as they learned about the various branches of statistics, the average salaries statisticians earn, the skills needed to be a statistician, and the importance of statisticians in the world today.

Students are being recruited for the second part of the program, where they will shadow volunteer WTASA mentors to see what a typical statistician's day looks like. These students will then work with their mentors to prepare a poster highlighting their experience that they will have the opportunity to enter into a poster contest.

ASA members and groups are invited to submit proposals for initiatives that support the mission of the association. For information about 2018 initiatives, visit the ASA website at *ww2.amstat.org/aboutMemberInitiativesInstructions.cfm.* ■

sectionnews

Physical and Engineering Sciences

Joanne Wendelberger, Joint Research Conference Chair, and Greg Piepel, Marquardt Memorial Speakers Program Chair

The 2018 Joint Research Conference will be held in Santa Fe, New Mexico, June 11–14. This conference is a joint meeting of the Spring Research Conference on Statistics in Industry and Technology, sponsored by the ASA Section on Physical and Engineering Sciences and the Institute of Mathematical Statistics, and the Quality and Productivity Research Conference, sponsored by the ASA Section on Quality and Productivity.

Program chairs Xinwei Deng and Brian Weaver are putting together a program with the help of program committee members Anne Hansen, Matt Pratola, C. Devon Lin, and Shane Reese. A website announcement and call for contributed papers and posters is forthcoming.

For further information, contact conference chair, Joanne Wendelberger, at *joanne@lanl.gov.*

Funding Available for Speakers on Applied Statistics

The SPES Marquardt Memorial Speakers Program facilitates visits of experienced applied statisticians to colleges and universities to give a seminar and meet with students and professors. SPES reimburses the host institution up to $1,000 to cover the expenses of the speaker's visit.

Speakers provide information to students about the following:

- What an applied statistician does
- How applied statisticians solve problems in science, engineering, technology, and business
- What nontechnical skills are required to be successful as an applied statistician

The Marquardt Industrial Speakers Program was established by SPES in the early 1990s to encourage careers in applied statistics. If you are an institution interested in having a speaker or a SPES member interested in being on the speakers list (or working directly with a local institution to set up a visit), contact Vaneeta Grover at *vkgrover@yahoo.com.* ■

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

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

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

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

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

Employers are expected to acknowledge all responses resulting from publication of their ads. Personnel advertising is accepted with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual orientation.

Also, look for job ads on the ASA website at *www.amstat.org/jobweb*.

California

■ Assistant, associate, or full professor of biostatistics, UCLA. Seeking candidate with expertise in the broad areas of functional data analysis, longitudinal and causal modeling, advanced regression methods for analyzing complex patterns of dependencies, and their applications to problems in public health. For the complete position description and to apply electronically go to UCLA Academic Recruit portal at *https://recruit.apo.ucla.edu/apply/JPF03318*. UCLA is an Affirmative Action/ Equal Opportunity Employer.

■ California Lutheran University invites applicants for the position of tenure track Assistant Professor in Applied Quantitative Methods. Applicants must have a doctorate in statistics, mathematics, social sciences, or the health sciences and experience applying quantitative methods to address problems in the social, behavioral, or health sciences. Proficiency in statistics and research methods is required. We look forward to reading your application! Please apply online: *https://careers.callutheran.edu/postings/3903.* EOE.

■ Department of Statistics & Applied Probability, University of California, Santa Barbara Invites applications for a tenure track open level professor position in statistics with emphasis on data science; starting 7/1/2018. Qualifications: research/teaching excellence; PhD in statistics, biostatistics or related fields. Candidates who can contribute to the diversity of excellence of the academic community through research, teaching and service are encouraged to apply. *https://recruit.ap.ucsb.edu/apply/JPF01097*. EO/AA employer.

Delaware

■ The Department of Applied Economics and Statistics at University of Delaware invites applications for a full time, tenure-track assistant professor in statistics. 9-month, academic-year appointment (approximately 60% of time devoted to research, 40% of time devoted to teaching). PhD in statistics (or related field) w/research interests in theoretical and applied statistics, bioinformatics, biostatistics, data science, or economics required. Complete job description and application: *https://apply.interfolio.com/46344.* UD is an Equal Opportunity Employer and Title IX institution. The University's Notice of Non-Discrimination can be found at *http://www.udel.edu/aboutus/legalnotices.html*.

Florida

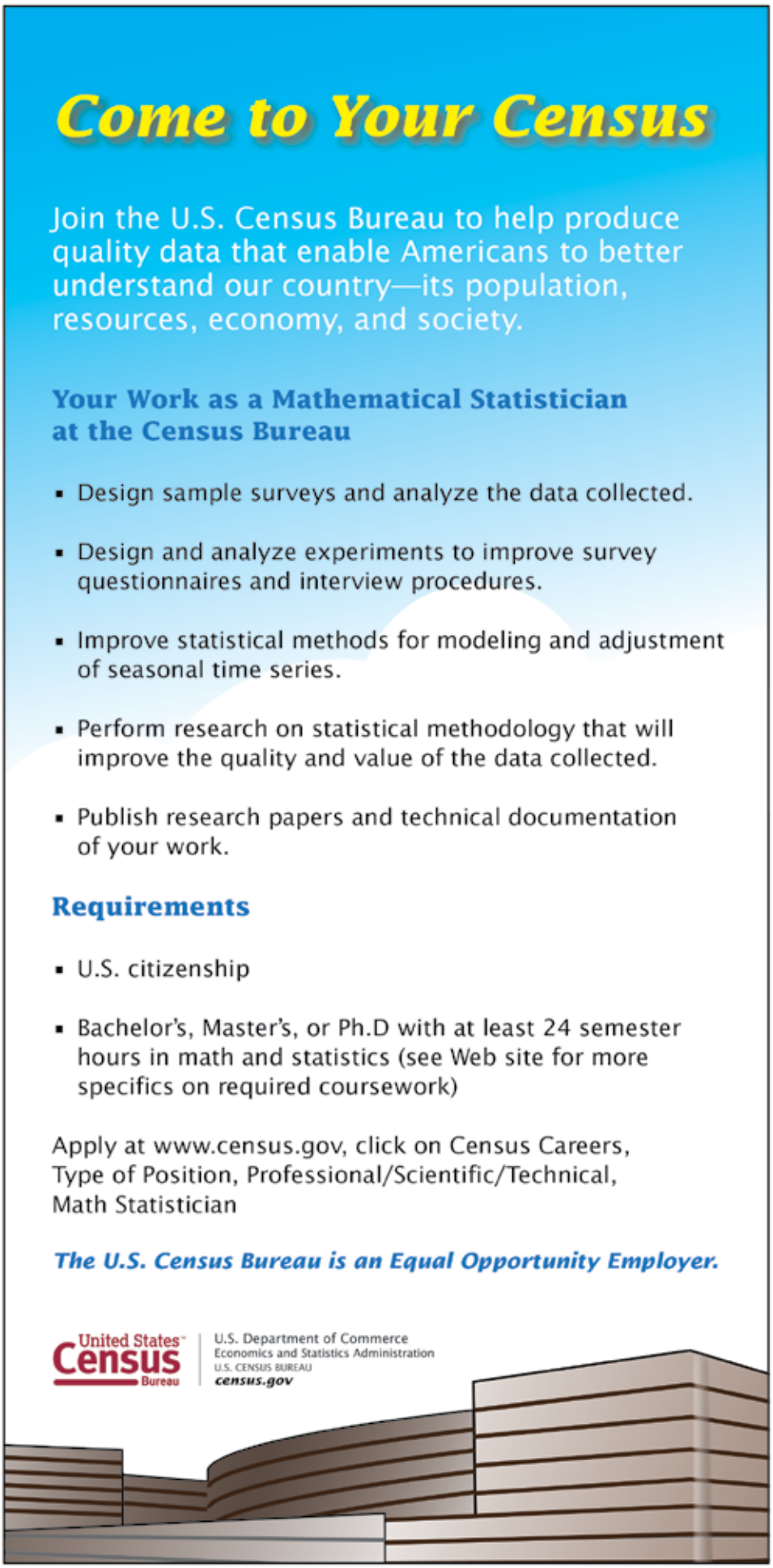
■ University of Florida is recruiting a non-tenure-track assistant, associate or full professor level position within the department of biostatistics, administered by College of Medicine and College of Public Health and Health Professions. Qualifications include a doctoral degree in biostatistics or related quantitative discipline, demonstrated excellence in teaching and service with an interest in biostatistics education in the health sciences. Please apply at *http://explore.jobs.ufl.edu/cw/en-us/job/502836.* The University of Florida is an equal opportunity institution dedicated to building a broadly diverse and inclusive faculty and staff.

■ The Department of Statistics at UCF expects to hire a nine-month, assistant professor, PhD program in big data analytics for August 2018. Preference will be given to those with expertise in data mining and big data analytics, statistical machine learning, and willingness to teach courses in these areas. Apply online at *www.jobswithucf.com/postings/51107*. Review of applications will begin immediately and continue until the position is filled. UCF is an equal opportunity/affirmative action employer.

Georgia

■ Tenure-track assistant professorship in statistical machine learning, Department of Statistics, University of Georgia, starting August 2018. Requires PhD in statistics or related discipline by 8/1/2018. To apply, visit *http://facultyjobs.uga.edu/postings/2909*. Applications received by 01/02/2018, are assured consideration. EOE.

■ Lecturer of statistics and business statistics, Department of Statistics, University of Georgia, starting August 2018. Requires PhD in statistics or related discipline by 8/1/2018. To apply,



visit *http://facultyjobs.uga.edu/postings/2907*. Applications received by 01/02/2018, are assured consideration. EOE.

Hawaii

■ The University of Hawaii at Manoa is searching for three tenure track faculty positions in the departments of mathematics, botany, and biology, respectively. These three positions are part of a college-wide effort to build capacity in data and computational science. Go to *http://workatuh.hawaii.edu* and search position numbers 84558 (mathematics, dept. of mathematics) or 85019 (computational biology, dept. of botany), or dept. of biology. *workatuh.hawaii.edu.* The University of Hawaii is an equal opportunity/affirmative action institution and is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin, ancestry, citizenship, disability, genetic information, marital status, breastfeeding, income assignment for child support, arrest and court record

Iowa

■ The Department of Statistics at Iowa State University invites applications for a tenure-track assistant professor position, beginning 8/16/2018. Duties include undergraduate and graduate teaching, graduate student advising, and developing and sustaining a high-impact research program that can compete for external funding. A PhD or equivalent degree in statistics or a closely related discipline is required. To assure consideration, applications must be received by 11/27/2017. *www.iastatejobs.com/postings/28404*. EOE.

■ The Department of Statistics at Iowa State University is seeking candidates for one open-rank tenure-track faculty position. The appointment will be affiliated with the Center for Statistics and Applications in Forensic Evidence. Duties of a successful candidate will include statistics research related to forensic sciences, undergraduate and graduate teaching, graduate advising, and professional and institutional service. The complete position posting at *www.iastatejobs.com/postings/27805* Iowa State University is an Equal Opportunity/Affirmative Action employer.

Kansas

■ The Department of Biostatistics at the University of Kansas Medical Center is recruiting an assistant professor rank faculty member who will be responsible for collaborative research, independent research, teaching and mentoring. The department consists of 12 Ph.D. statisticians, 4 teaching associates, 12 staff members and over 50 graduate students. To apply go to *https://jobs.kumc.edu/* and search position 01201654. Kansas University Medical Center is an equal opportunity employer.

Kentucky

■ The Department of Statistics, University of Kentucky, Lexington, Kentucky seeks a tenure-track, assistant or associate professor to begin August 2018. Areas of statistics and/or probability with experience in computational and/or mathematical statistics is encouraged. Required: PhD in statistics or related field. CV, teaching statement, research statement and contact information for three references are required. See *https://ukjobs.uky.edu/postings/162906.* Selection begins December 1, 2017. Email *statjobs@uky.edu* with questions. EOE.

UNIVERSITY OF PENNSYLVANIA
PERELMAN SCHOOL OF MEDICINE

ASSISTANT PROFESSOR OF BIOSTATISTICS, CLINICIAN-EDUCATOR TRACK

The Department of Biostatistics and Epidemiology at the Perelman School of Medicine at the University of Pennsylvania seeks candidates for an Assistant Professor position in the non-tenure clinician-educator track. Applicants must have a Ph.D. or equivalent degree.

Review of applications will begin on November 1, 2017 and continue until the position is filled. The expected start date is July 2018 or later, pending the availability of funds.

Applicants with statistical methods and collaborative expertise in health services and policy research, clinical research, and/or translational science are especially encouraged to apply. Candidates are expected to have a strong commitment to teaching. Primary teaching responsibilities include participation in departmental PhD and MS training programs.

We seek candidates who embrace and reflect diversity in the broadest sense.

Apply for this position online at: ***https://www.med.upenn.edu/apps/faculty_ad/index.php/d4751***

The University of Pennsylvania is an EOE. Minorities/Women/Individuals with disabilities/Protected Veterans are encouraged to apply.

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

DEPARTMENT OF BIOSTATISTICS

The Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health is seeking an outstanding applicant to join our tenure track faculty. Rank of appointment will be commensurate with experience, and new PhDs and recent postdoctoral fellows are encouraged to apply. Candidates should have a PhD or equivalent in statistics, biostatistics, or a comparable field. Women and under-represented minority candidates are particularly encouraged to apply.

The Hopkins Department of Biostatistics, founded in 1918, was the first degree-granting department of statistical science in the US and has ranked among the best throughout its history. The Johns Hopkins Health Institutions (Schools of Public Health, Medicine, and Nursing, and the Johns Hopkins Hospital) are among the top worldwide and provide a research environment in which energetic faculty can achieve scientific excellence. Today, the Department comprises 23 tenure track faculty members, 21 research track faculty members, 15 postdoctoral fellows, 42 PhD students, 14 full-time master degree students, and 7 students pursuing joint master degrees together with doctorates in other departments. Emphases of the department include statistical inference and methods, massive and real-time measurement, data science, educational innovation and subject-area content for genomics, population health, environmental health, behavioral health, and clinical applications in a diverse variety of medical specialty areas.

TO APPLY

Email cover letter, CV, contact information for three references, a statement of research interests and goals, a teaching statement, and two manuscripts or articles representing your most important work to: **Faculty Search Committee at *margo@jhu.edu***.

The Johns Hopkins University is an affirmative action/equal opportunity employer.

Maryland

■ The Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health seeks a self-directed biostatistician with a strong background in statistical principles and analytic methods to perform data analyses in a longitudinal, multi-site cohort study of HIV-infection, aging and cardiovascular health. Knowledge of Stata, SAS, S-plus or R required. Opportunities to present work and coauthor publications. Apply on-line *http://jobs.jhu.edu; requisition ID 1359* or 349. Johns Hopkins University is an EO/AA employer committed to recruiting, supporting, and fostering a diverse community.

■ The FDA Center for Biologics Evaluation and Research (CBER) seeks biostatisticians to work on review and research for vaccines, blood products, and advanced therapeutics such as gene therapies. Potential research topics include innovative clinical trial design, biomarkers, meta-analysis, and data standards. CBER-regulated products touch the lives of every American and address critical public health needs. Please refer to the following announcement for more details: *http://easyurl.net/87053*. EOE.

Massachusetts

■ The Department of Mathematical Sciences at Bentley University-an independent, private business-oriented university located in suburban Boston-invites applications for a tenure track position beginning fall 2018. The rank and salary will be commensurate with experience. Senior appointments will be considered. Must hold a PhD in statistics or related discipline. Application Instructions: In order to apply to this position, please submit an online application directly to *jobs.bentley.edu/postings/3200*. Bentley University is an Equal Opportunity Employer

■ Man Numeric Investors is seeking Associate Quantitative Researchers to develop and improve quantitative strategies in financial markets by identifying investment ideas or data sources; gathering and refining complex data for modeling; coding and performing statistical analysis to build and refine models; interpreting, presenting and implementing results; and conducting research on various implementation aspects of investment strategies. Please apply here: *https://mancareers.resourcesolutions.com/gold/iapply/index.cfm?event=jobs.detail&jobid=899056* .

■ Applications are invited for a tenure-track position in statistics at Amherst College to begin July 2018: see the full ad and requirements at MathJobs.Org. We seek faculty with broad intellectual interests, a strong commitment to research, and a passion about teaching statistics and data science to undergraduates. Applications received by October 8, 2017 will be guaranteed consideration. Questions can be addressed to *mathstats@amherst.edu*. Amherst College is an equal opportunity employer.

Michigan

■ The Department of Statistics and Probability and the Department of Computational Mathematics, Science and Engineering at Michigan State University plan to fill at least two joint tenure-track or tenured faculty positions beginning Fall 2018. One position will have majority appointment in STT and the other having majority in CMSE. For full description/application for these positions, go to: *www.mathjobs.org/jobs/jobs/10998*. MSU is an Affirmative Action/Equal Opportunity employer.

■ The Department of Biostatistics at the University of Michigan is seeking applicants for a tenure-track assistant professor faculty position for fall 2018. Candidates must have a strong research background with a doctoral degree in biostatistics, statistics, mathematics, the computational sciences or a related field. Candidates will be expected to develop an outstanding research and teaching program. For further details, visit: *https://sph.umich.edu/biostat/faculty-research/job_postings.html* The University of Michigan is an affirmative action/equal opportunity employer. Applications from women and minorities are welcomed and strongly encouraged.

Missouri

■ Assistant professor, Statistics Department, University of Missouri, tenure track assistant position; all areas of statistics are encouraged to apply. PhD in statistics required by

BU Henry M. Goldman School of Dental Medicine

Boston University Henry M. Goldman School of Dental Medicine invites applicants for a full-time Biostatistician Faculty position, Open Rank. Responsibilities involve teaching, mentoring, data analysis, and service. The successful candidate will: 1) provide expert statistical consultation on study design, implementation, analysis and the preparation of protocols, grants and manuscripts for multiple projects; 2) plan and oversee analyses for many types of data and studies; 3) train faculty, residents and students in biostatistics and study design and 4) provide curriculum development and instruction in biostatistics at the pre-and post-doctoral levels.

Requirements include: an earned PhD in Biostatistics or Statistics, proficiency with SAS, SPSS, Stata, R, and/or S-plus, previous experience teaching at the graduate level as a course leader and developing course(s), peer-reviewed publications, experience mentoring student research, minimum of three years of experience collaborating with experimental and clinical investigators, experience in study design and data analysis for a wide range of experimental, observational, clinical and longitudinal studies, experience with analysis of large medical data bases, experience in participating in externally funded grant projects.

The ideal candidate will have the ability to work autonomously on several different projects with a range of investigators across a variety of clinical disciplines. Excellent oral and written communication skills are required. Salary and rank will be commensurate with experience. Candidates must be available to begin employment on July 1, 2018.

Application materials should be addressed to Dr. Belinda Borrelli, Chair of the Search Committee, and include a cover letter describing how the candidate's qualifications and interests fit the position description, CV, teaching statement, and names of 3 professional references, emailed to **Ms. Lisa Case (*Case@bu.edu*)**. Applications will be reviewed on a rolling basis until the position is filled.

The Henry M. Goldman School of Dental Medicine is located within the Boston University Medical Campus in Boston's South End and offers faculty robust opportunities for collaboration, advanced training, professional development and career growth.

Boston University is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, national origin, physical or mental disability, sexual orientation, gender identity, genetic information, military service, or because of marital, parental, or veteran status or any other characteristic protected by law. Boston University is a VEVRAA Federal Contractor.

August 15, 2018. Apply online at *http://hrs.missouri.edu/find-a-job/academic.* Upload cover letter, CV, research & teaching statements. Deadline: December 1, 2017. Have three letters of recommendation sent to *muasstatsrchtt@missouri.edu*. The University of Missouri is an Equal Opportunity/Affirmative Action/ADA Employer.

New Jersey

■ Tenure-track faculty positions. Rutgers University, New Brunswick, NJ. The Rutgers Department of Statistics & Biostatistics invites applications for tenure-track assistant and associate professors to start fall 2018. Applicants must have a PhD in statistics or related fields. Responsibilities of the position: student teaching/supervising and conducting research in statistics, particular strength in data science, statistical computing, spatial statistics are preferred. See details on application site *http://apply.interfolio.com/45771*. Rutgers University is an equal opportunity/affirmative action employer.

NIH National Institute of Allergy and Infectious Diseases

DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES BIOSTATISTICS RESEARCH BRANCH

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

Applicants should send their resume and three references to **Dean Follmann, Chief BRB at *dean.follmann@nih.gov.***

HHS, NIH, and NIAID are equal opportunity employers

NYU Langone Health

ASSOCIATE OR FULL PROFESSOR POSITION IN CLINICAL TRIALS: DIVISION OF BIOSTATISTICS, DEPARTMENT OF POPULATION

HEALTH, NYU SCHOOL OF MEDICINE

The Division of Biostatistics in the Department of Population Health at NYU School of Medicine advances scientific knowledge to benefit individual and population health by creating, disseminating, and implementing rigorous, innovative statistical methodologies across the entire spectrum of biomedical research.
The Division is posed for a phase of dynamic growth, with a newly restructured doctoral program and rich opportunities for cross-institutional collaborations.

The **Department of Population Health (*http://pophealth.med.nyu.edu/*)**, founded in 2012, is a leader in the discovery and translation of new knowledge into policy and practice. Through its research, education, and service, the Department seeks to advance population health and health equity. Core areas of Department strength include healthful behavior change, early childhood health and development, comparative effectiveness and decision science, behavioral economics and health policy, community health improvement, healthcare delivery science, epidemiology, biostatistics, and medical ethics. NYU Langone Health is one of the nation's premier academic medical centers. Our trifold mission to serve, teach, and discover is achieved daily through an integrated academic culture devoted to excellence in patient care, education, and research. We seek candidates for a senior faculty position focused on innovative clinical trial design, with preference for experience leading large-scale randomized trials and interest in complex cooperative projects.

POSITION QUALIFICATIONS: Candidates must possess an earned doctorate in biostatistics, statistics, or a related quantitative field. They should be established researchers with outstanding scholarship and a strong commitment to teaching. Candidates must demonstrate evidence of successful leadership of coordinating centers, core facilities, or other central trial-related resources, and show strong intellectual and organizational skills. Successful candidates will engage in both methodological and collaborative research with existing faculty at NYU School of Medicine and other Schools and Centers within NYU, have a commitment to team science, and possess outstanding oral and written communication skills. Candidates are also expected to have a track record of externally funded, independent research.

TO APPLY: Please submit the following (addressed to Dr. Andrea Troxel, Director of Biostatistics) ***http://apply.interfolio.com/46307***

- Cover letter
- Curriculum vitae
- Statement of current and future research agenda

APPLICATION DEADLINE: Review of applications will continue until the position is filled.

NYU Langone Health is an equal employment/affirmative action employer and does not discriminate on the basis of race, color, religion, gender, gender identity or expression, sexual orientation, marital/or parental status, age, national origin, citizenship, disability, veteran status, or any other classification protected by applicable Federal, State, or Municipal Law. Women, racial and ethnic minorities, persons of minority sexual orientation or gender identity, individuals with disabilities, and veterans are encouraged to apply.

New York

■ Department of Statistics and The School of Professional Studies, Columbia University. The department of statistics and SPS invites applications for lecturer in discipline to senior lecturer in discipline positions to begin July 1, 2018. Applicants please initiate the application process and obtain further instructions at: *https://academicjobs.columbia.edu/applicants/Central?quickFind=65243*. Inquiries may be made to *dk@stat.columbia.edu*. Review begins January 15, 2018 and continues until the position is filled. Columbia University is an Equal Opportunity/Affirmative Action employer.

■ Department of Statistics, Columbia University. The department of statistics invites applications for four year term assistant professor positions to begin July 1, 2018. Applicants please initiate the application process and obtain further instructions at: *https://academicjobs.columbia.edu/applicants/Central?quickFind=65223*. Inquiries may be made to *dk@stat.columbia.edu*. Review begins December 1, 2017 and continues until the position is filled. Columbia University is an Equal Opportunity/Affirmative Action employer.

■ Department of Statistics, Neuroscience and MBBI, Columbia University. The department of statistics, neuroscience and MBBI invites applications for (tenured or tenure-track) at the assistant or associate professor level positions to begin July 1, 2018. Applicants please initiate the application process and obtain further instructions at: *https://academicjobs.columbia.edu/applicants/Central?quickFind=65242*. Inquiries may be made to *dk@stat.columbia.edu*. Review begins December 1, 2017 and continues until the position is filled. Columbia University is an Equal Opportunity/Affirmative Action employer.

■ Department of Statistics, Columbia University. The department of statistics invites applications for the newly created distinguished postdoctoral fellowship to begin July 1, 2018. Applicants please initiate the application process and obtain further instructions at: *https://academicjobs.columbia.edu/applicants/Central?quickFind=65253*. Inquiries may be made to *dk@stat.columbia.edu*. Review begins January 15, 2018 and continues until the position is filled. Columbia University is an Equal Opportunity/Affirmative Action employer.

Westat | An Employee-Owned Research Corporation®

EOE

Statistical Career Opportunities with Westat

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

We are currently recruiting for the following position:

Survey Sampling Statistician

This position requires a master's degree or Ph.D. in statistics with coursework in survey sampling or a master's or Ph.D. in survey sampling. Candidates with a master's must have at least 8 years of experience in sample survey design, selection, or weighting and a Ph.D. with 6 years' experience. Although not required to do programming, candidates would benefit from knowing SAS and other statistical software packages. Qualified candidates must have excellent written and oral communication skills, strong organizational skills, and the ability to handle multiple tasks simultaneously.

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

www.westat.com

■ Department of Statistics, Columbia University. The department of statistics invites applications for a tenure track assistant professor position to begin July 1, 2018. Applicants please initiate the application process and obtain further instructions at: *https://academicjobs.columbia.edu/applicants/Central?quickFind=65221*. Inquiries may be made to *dk@stat.columbia.edu*. Review begins December 1, 2017 and continues until the position is filled. Columbia University is an Equal Opportunity/Affirmative Action employer.

■ Seeking a graduate in biostatistics, statistics, or bioinformatics, interested in statistical cancer genomics, for a postdoctoral position to work on large-scale sequencing data from local and public resources. Send cover letter, CV and contact information for 3 references to Katherine Cheung (for Drs Colin Begg and Ronglai Shen) at *wongk1@mskcc.org*: Memorial Sloan Kettering Cancer Center, 485 Lexington Avenue, New York, NY 10017. EOE.

Oklahoma

■ Department of Biostatistics and Epidemiology, College of Public Health, University of Oklahoma Health Sciences Center, seeks a tenure-track assistant professor of biostatistics. PhD in biostatistics or related field and 12 months collaborative research gained during training or employment required. Graduate teaching experience desired. Preferred expertise: statistical genetics, health services research, or big data. Attach letter of interest, CV, names of three references: Daniel Zhao, (*daniel-zhao@ouhsc.edu*). The University of Oklahoma is an Equal Opportunity / Affirmative Action Employer. Women, minorities, individuals with disabilities and protected veterans are encouraged to apply.

Pennsylvania

■ The Wharton Statistics Department, University of Pennsylvania, seeks a postdoctoral researcher in statistics and/or probability. The position is for two years beginning in Summer 2018, with a possible extension to three. The primary focus is for the scholar to develop her/his research. A light teaching load is involved. A PhD is required. Please visit our website to apply: *https://statistics.wharton.upenn.edu/recruiting/dept-postdoc-position*. Please direct questions to *stat.postdoc.hire@wharton.upenn.edu*. The University of Pennsylvania is an EOE.

■ The University Of Pittsburgh Department of Statistics is seeking applications for advanced associate or full professor beginning October 2018, pending budgetary approval. The Candidate should have a strong methodological research program in mainstream modern statistics, with a solid record of publications and research funding. The successful candidate must also demonstrate excellence in teaching, mentoring graduate and/or undergraduate students, and administration. Applicants can apply online: https://facultysearch.as.pitt.edu/apply/index/MjAw. The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. EEO/AA/M/F/Vets/Disable.

■ The Wharton Statistics Department, University of Pennsylvania, seeks applicants for a full-time, tenure-track assistant professor position, appointment beginning July 2018. Applicants must show outstanding capacity and achievement in research, along with excellent teaching skills. Applicants must have a PhD (expected completion by June 30, 2019 is acceptable) from an accredited institution. Please visit our website to apply: *https://statistics.wharton.upenn.edu/recruiting/facultypositions*. Questions can be sent to *statistics.recruit@wharton.upenn.edu*. The University of Pennsylvania is an EOE.

■ The University of Pittsburgh Department of Statistics is seeking applications for two lecturers beginning September 2018, pending budgetary approval. Positions are outside the tenure stream with the expectation of multiyear contract renewals. Candidates should preferably have a PhD in statistics, biostatistics or related field and a demonstrated talent for teaching undergraduate statistics courses and mentoring students. Position details are available at *www.stat.pitt.edu/open-positions-department-statistics*. The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. EEO/AA/M/F/Vets/Disable.

South Carolina

■ The Hollings Cancer Center and the Department of Public Health Sciences at the Medical University of South Carolina invite applications for an assistant or associate professor of biostatistics. This position is for biostatisticians with research interests in clinical and translational cancer research, including novel early phase trial design. A PhD in biostatistics or related field is

ACADEMIA SINICA
INSTITUTE OF STATISTICAL SCIENCE

Regular Research Positions

The Institute of Statistical Science, Academia Sinica, is seeking candidates for tenure-track/tenured research positions at the level of assistant, associate or full research fellow available in 2018. Candidates should have a Ph.D. degree in statistics or related areas. Application materials must include (1) a curriculum vita, (2) three letters of recommendation, and (3) representative publications and/or technical reports. Additional supporting materials such as transcripts for new Ph.D. degree recipients may also be included. Electronic submissions are encouraged. Applications should be submitted to

Dr. Yi-Hau Chen
Chair of the Search Committee
Institute of Statistical Science, Academia Sinica
128 Sec. 2 Academia Road, Taipei 11529,
Taiwan, R.O.C.
Fax: +886-2-27831523
E-mail: ***recruit2017@stat.sinica.edu.tw***

Application materials should be received by **December 28, 2017** for consideration, but early submissions are encouraged.

NC STATE UNIVERSITY
DEPARTMENT OF STATISTICS

Tenure-Track Assistant Professor Positions

The Department of Statistics at North Carolina State University seeks to hire two tenure-track Assistant professors to begin in August 2018. Exceptional candidates at the Associate and Full Professor ranks will also be considered.

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

To apply, please visit ***http://jobs.ncsu.edu/postings/91326*** or ***http://jobs.ncsu.edu/postings/91342***.

The Department provides a dynamic environment for teaching, research and collaborations across disciplines. Inclusiveness and diversity are academic imperatives and are university goals. We are particularly interested in candidates who have experience working with students from diverse backgrounds and a demonstrated commitment to improving access to higher education for students from underrepresented groups. The Department's location in the Research Triangle provides rich opportunities for interactions with industry; other universities, including Duke University and the University of North Carolina at Chapel Hill; and government agencies. Faculty enjoy collaborations with medical researchers at Duke, environmental scientists at the EPA research facility, pharmaceutical researchers at Glaxo-SmithKline, and software developers at SAS Institute, among many others. The Department is also a founding cooperator of the NSF-funded Statistical and Applied Mathematical Sciences Institute (SAMSI), located nearby in Research Triangle Park.

All applicants must have a Ph.D. in Statistics or Biostatistics by the time of employment. Processing of applications will begin **November 2017**, and continue until the position is filled. Questions about the position may be directed to the Search Committee Chair (***stat_search@stat.ncsu.edu***).

Please submit recent transcripts as part of the application process. **Please upload the names and contact information for your three letters of reference at *www.stat.ncsu.edu/references*** so we can track the letters received from your references. All reference letters will be made available for review by the departmental voting faculty.

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

COLUMBIA UNIVERSITY | MAILMAN SCHOOL of PUBLIC HEALTH

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

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

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

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

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

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

Qualifications: Competitive candidates will hold a Doctorate degree in biostatistics, statistics, or related quantitative field by the start date. Consideration for tenure requires strong teaching, research and publication records in addition to the ability to secure external funding. The department focuses on teaching, research and professional experience in biostatistics for non-tenure positions. Junior faculty candidates should demonstrate clear potential in research, teaching, and the ability to secure independent funding; senior faculty candidates should be internationally recognized scholars who demonstrate excellence in research, teaching, and mentoring.

Applications: Send a letter of interest accompanied with curriculum vitae to: academicjobs.columbia.edu/applicants/Central?quickFind=65297
Deadline: Review of applications begins in December 2017 and will continue until the position is filled.
Web Sites: Biostatistics (http://www.mailman.columbia.edu/academic-departments/biostatistics); MSPH (http://www.mailman.columbia.edu/); CUMC (http://www.cumc.columbia.edu/).

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

Columbia University is an Equal Opportunity/Affirmative Action Employer -- Race/Gender/Disability/Veteran

required. Interested applicants can apply online: *http://careers.pageuppeople.com/756/cw/en-us/job/502998/univ-assistantassociate-professor-public-health-sciences*. EOE.

Virginia

■ Department of Statistics, University of Virginia, invites applications for two positions, open-rank and assistant professor general faculty. Applicants must present evidence of outstanding accomplishments and promise in research and teaching as appropriate. Candidates should be dedicated to UVA's mission of excellence in research, teaching graduate/undergraduate courses, and service. We expect substantial growth due to UVA President's Big Data Initiative. See *www.stat.virginia.edu* University of Virginia is an EO/AA Employer. ■

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A lot of social chatter and advice was shared on Twitter during the Women in Statistics and Data Science Conference. Search #WSDS2017 to read more.

Emma Benn @EKTBenn
"Never make a decision in the heat of the moment"–Great advice from #WSDS2017 networking & peer mentoring junior #statistician panel

Christina @canoodleson
Find a mentor who scares you just a little bit." Dr. Jo Hardin #WSDS2017

Isabella R. Ghement @IsabellaGhement
Kindness matters in the good times and especially in bad times.' Dr. Anja Panorska at #WSDS2017

Tawny B. @tawnypaige10
#WSDS2017 Tip: Never say "oh that's be easy" it devalues our work #teamscience.

Lucy @LucyStats
Jeri Mulrow demonstrates that statisticians & data scientists are quite well-suited for leading change. #WSDS2017.

Jennifer Thompson
@StatGirlAM: My job is not to make mentees be like "me"; it's to make them be the best X they can be.

Jo Hardin @jo_hardin47
Only at #WSDS2017

Jennifer Thompson @jent103
#WSDS2017 = the friendliest, most welcoming conference I've attended. Thanks to the organizers, and to attendees for sharing your work & selves!

We asked our followers to tell us their favorite statistics-related blog. Here is what they said:

F. Javier Rubio @FJavierRubio1
Popular ones: Andrew Gelmans at *andrewgelman.com* and Roberts: *https://xianblog.wordpress.com*

Marc Schwartz
Statistical Thinking: *http://www.fharrell.com*

Carmen Frost
Statistics by Jim *http://statisticsbyjim.com*

Kel Zou
Top 50 Statistics Blogs of 2017: *www.thebestcolleges.org/rankings/best-statistics-blogs*

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Take a photo of your book case full of your favorite stats books. Post them to our Facebook page. If you're on Twitter, use #showusyourbookcase. Thanks to @DrJasonBrinkley and @StatStas for this idea!

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