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AMSTATNEWS

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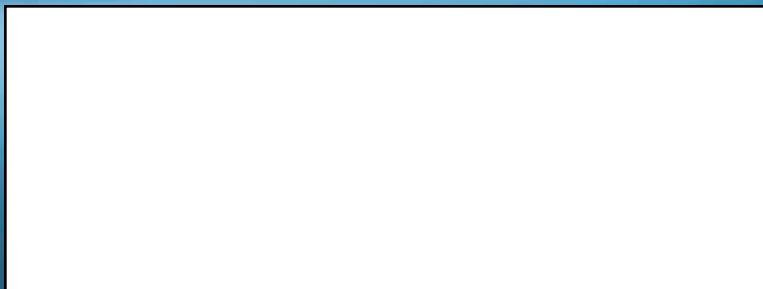
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Online Articles

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

Memorial funds provide an opportunity to honor departed colleagues while promoting the careers of promising statisticians. ASA members have opened several funds in the names of family members and friends, and most need donations to make them viable. To view the awards in need of donations or to contribute, visit <http://magazine.amstat.org/blog/2013/08/01/give-to-asa>.

Visit the **ASA Calendar of Events**, an online database of statistical happenings across the globe. Announcements are accepted from educational and not-for-profit organizations. To view the complete list of statistics meetings and workshops, visit www.amstat.org/datetime.

Many of the **sections and committees** sponsor events and host workshops and meetings. For details about these events and other news, make sure you visit our section, chapter, and committee pages online at <http://magazine.amstat.org>.



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How to Write an Effective Cover Letter and Résumé

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



Eash

Contributing Editor

Dawn Eash is a senior managing consultant 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.

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Our Careers in Statistics: A Most Enjoyable Ride

The ASA will celebrate its 175th anniversary in 2014. In preparation, column "175"—written by members of the ASA's 175th Anniversary Steering Committee and other ASA members—will chronicle the theme chosen for the celebration, status of preparations, activities to take place, and, best yet, how you can get involved in propelling the ASA toward its bicentennial.



Jonas and Susan Ellenberg

Contributing Editors

Jonas Ellenberg is a professor of biostatistics at the University of Pennsylvania. For 23 years, he served in progressive leadership positions in the biometry branch of the National Institute of Neurological Diseases and Stroke at the National Institutes of Health. Following his service there, he spent 10 years as vice president and head of biostatistics at Westat. He is an ASA Fellow and past ASA president.

Susan Ellenberg is a professor of biostatistics at the University of Pennsylvania. Prior to joining in 2004, she held leadership positions at the National Institutes of Health and U.S. Food and Drug Administration. She is an ASA Fellow and recipient of the ASA Founders Award.

Transforming Our Culture of Peer Review

A privilege of being ASA president is writing this column and speaking directly to ASA members. This month, I'd like to discuss with you an issue that has been an ongoing source of frustration for many of us—one that more than ever threatens the impact of our discipline in this new era of unprecedented discovery, Big Data, and data science.

This challenge is the long-standing culture of peer review in most scholarly journals in our discipline. One that is too slow and too critical. That has driven some members of our profession to seek alternative outlets for their work. That we as a profession must address.

I am certainly not the first to sound this call, but I hope by devoting this column to it, I can inspire more of us to become actively engaged in changing it.

My perspective is shaped by my experience as an author, referee, associate editor, and editor. In the 1990s, I was an associate editor for *JASA Applications and Case Studies* (<http://bit.ly/15S57rg>) and *Biometrics* (<http://bit.ly/14JIGVV>). In 2000–2002, I was coordinating editor of *Biometrics*, and, since 2006, I have been that journal's executive editor.

For readers who may not be old enough to know much about journals in the 1990s, the editorial process took place almost solely by *mail*. Although there was email and Internet (we weren't entirely prehistoric), the technology required to support the electronic systems of today had not yet evolved. Authors were required to submit, by mail, five *paper* copies of their manuscripts, enough for the editor, associate editor, and several referees.

When I was an associate editor, fat packages of papers from editors would arrive in my mailbox. Once I identified referees, copies of the paper were sent to them—by mail, with some to far-flung

destinations going by *airmail!* Referees would mail their reviews to me, and I would mail my report to the editor, along with the referees' reports.

When I became *Biometrics* editor in 2000, much of journal business still took place by mail. But things changed rapidly. By the time I handled my last paper in late 2003, almost all submissions and reviews were by email, and *Biometrics* was being published online.

This history lesson highlights that, prior to the 2000s, the expectation was that the editorial process *had* to be slow, with papers and reports spending days or weeks in transit and in mailrooms. The transition to electronic processes revealed the real culprit—the time a paper languished on an editor's, associate editor's, or referee's desk. The electronic age did little to alter this "delay culture."

In 2000, then-editors from *JASA*, *Biometrics*, *Biometrika*, *Annals of Statistics*, the Royal Statistical Society journals, and others met at JSM in Indianapolis for a frank discussion. I was shocked when one editor declared that our papers are just more complex and substantial than those in other fields, and if it takes six months or a year to review a paper, so be it. That comment emphasized what a profound cultural challenge we faced.

And continue to face. Things have improved—somewhat. At *Biometrics*, for example, median time to review is about two months (so half of all papers still take longer ...), but we are considered swift by statistics standards. And securing good referees, ever more challenging given escalating demands on academicians' time to attract external funding, would be even more so if we shortened expectations further.



Marie Davidian

It is unlikely that our system of peer review will be transformed radically overnight. But, given that some form of peer review is critical to the advance of our field, we must change our practices.

And we still compare badly to other fields. A familiar refrain is that journals in medicine, genetics, and so on demand—and receive—1–3 week turnarounds on their submissions. What is different about these cultures that inspires such prompt evaluation of fellow researchers' work? Many of us have recoiled as collaborators wonder out loud, "Your stuff must not be very important if there is no urgency to disseminate it."

It is essential for new developments in our field to be reported quickly so our science keeps pace with today's breakneck scientific progress. And, like it or not, evaluation of researchers continues to rely on publication record, putting junior members of our field at a stressful disadvantage. We all know it doesn't take months of daily toiling to review a paper—it takes, at most, days, and sometimes an afternoon.

Exacerbating this problem is our tendency to be overly critical of each other's work. Of course, the point of peer review is criticism—but constructive criticism, directed toward making the work more useful and accessible. Many reviewers embrace this principle, and, as an editor, I have been impressed with their thoughtfulness and genuine desire to improve the work. But I have been disheartened by the proportion of reviews that strive to put authors through contortions, demanding copious further simulations and extensions and changes in focus that are beyond the authors' intended scope. Often, such revisions would be, at best, incremental improvements whose main impact would be to slow the dissemination of the ideas.

Over the years, there have been bold attempts to affect change. For example, Scott Zeger and Peter Diggle founded *Biostatistics* (<http://biostatistics.oxfordjournals.org>) in 2000 with the goal of swift, high-quality review of all submissions. Sadly, such efforts have had little effect on our culture.

Today, the fluid landscape of publication places us at a crossroads. Repositories such as arXiv

(<http://arxiv.org>) facilitate widespread dissemination and ongoing feedback and revision. The open access movement and government mandates (<https://petitions.whitehouse.gov/response/increasing-public-access-results-scientific-research>) for access stand to reinvent the way research is reported. Indeed, the ASA convened a panel in 2012 charged with reporting on models for the future of ASA publications, as discussed in a series of *Amstat News* articles (<http://magazine.amstat.org/blog/category/publication-series>) earlier this year.

Some members of our profession have argued that we should seize the opportunity for radical change. I encourage you to read the commentaries by David Banks (<http://magazine.amstat.org/blog/2012/10/01/175-oct12>) and Karl Rohe (<http://magazine.amstat.org/blog/2012/10/01/stats-view-oct12>) in the October 2012 issue of *Amstat News* on alternative modes of peer review, as well as Larry Wasserman's blog post, "A Rant on Refereeing" (<http://normaldeviate.wordpress.com/2012/10/20/a-rant-on-refereeing>), in which he proposes a "world without referees" in which all articles are disseminated on public repositories and are "crowd-peer reviewed."

Nick Fisher is the force behind *Stat*, the International Statistical Institute's online journal for rapid dissemination of statistics research (<http://onlinelibrary.wiley.com/journal/10.1002/28ISSN%292049-1573>), launched in 2012. *Stat* publishes short, focused articles. Papers undergo a single-pass review process—rejection or acceptance are the only options—that strives for 30-day submission to publication. Rather than writing unstructured reports, reviewers use a checklist approach that focuses broad attention on whether a paper represents a meaningful advance rather than on minutiae. Nick says that, while it is too early to evaluate this model's success, *Stat* has published some excellent articles and authors are receiving swift decisions.

It is unlikely that our system of peer review will be transformed radically overnight. But, given that some form of peer review is critical to the advance of our field, we must change our practices so we can adapt quickly to the uncertain future of publication. This cannot be mandated from above; it can only happen from the bottom up, through individual efforts. The next time you review a paper—as referee, associate editor, or editor—please contemplate the role you can play. The future of statistical science demands our commitment to a new review culture.



Tribute to Jerome Cornfield

A legacy in the field of statistics

Adapted from Jerome Cornfield's obituary in *The American Statistician* (1980), written by Samuel W. Greenhouse and Max Halperin

Jerome Cornfield, a former president of the American Statistical Association (1974) was the director of the biostatistics center and a professor of statistics in the department of statistics at The George Washington University. He is also known as one of the world's leading statisticians.

Cornfield was born in New York City and attended New York University, graduating in 1933 with a BA in history.

In 1935, Jerry (as he was called by almost all who knew him) entered the federal civil service as a statistician in the Bureau of Labor Statistics of the Department of Labor. He transferred to a statistical unit of the old Public Health Service in 1947, which subsequently became a branch of the National Cancer Institute, National Institutes of Health (NIH). He left NIH in 1958 to serve as chair of the department of biostatistics at The Johns Hopkins University. In 1960, he returned to the NIH as assistant chief of the Biometrics Research Branch of the National Heart Institute. He became branch chief in 1963 and served in that capacity until his retirement from the federal government in 1967. He then joined the Graduate School of Public Health of the University of Pittsburgh as a research professor of biostatistics. In 1972, he became a professor of statistics at The George Washington University and also director of the biostatistics center and served as chair of the department of statistics from 1973 to 1976.

Cornfield made many major contributions to statistical methodology in two areas of application: economics and the biomedical sciences.

At the Bureau of Labor Statistics from 1935–1947, Cornfield made important contributions to the development of probability sampling, economic statistics, and input-output analysis.

In the area of probability sampling, he designed the sample for “Family Spending and Saving in Wartime” in 1942. In economic statistics, he played a major role in the revision of the Consumer Price Index, 1938 to 1940. He spent three years (1944–1947) developing and introducing (in cooperation with Duane Evans and Marvin Hoffenberg) the ideas and techniques of input-output analysis into the federal government. In the areas of biology and medicine, Cornfield contributed to statistical methodology for a broad variety of fields of application, both in laboratory and clinical research, and was extremely active and valued as a data analyst. He achieved recognition for his work on problems of photosynthesis, the toxicity of the essential amino acids, the statistics of bioassay, the effects of irradiation in animals, chemical kinetics problems



Jerome Cornfield, 1974

Cornfield's true legacy is that today's statisticians continue to use the methods he introduced to understand the connection between risk factors and disease.

related to the use of marker substances, carcinogenesis in animals, the related problems of safe-dose estimation, and computer diagnosis of electrocardiograms.

Cornfield gained recognition from a broader audience for his contributions to the field of epidemiology. His writings enabled epidemiologists studying possible etiologic factors in disease to estimate the relative risk of those exposed to that factor from retrospective case-control studies. In the area of controlled clinical trials, Cornfield was a pioneer in recognizing and studying the problems of design and data analysis that arise in the conduct of clinical trials of therapies for

An Account from Susan Ellenberg, author of *Standing on the Shoulders of Jerome Cornfield*

I went to work for Jerry Cornfield in the summer of 1971 as a statistical programmer. (I had been teaching high-school mathematics for three years, but was pregnant with our first child and planning to take time off from teaching. Janet Wittes, who was working for Jerry as a research associate at that time, approached me about doing some computer programming for them during the summer before the baby was born, and it worked out well enough that I continued afterward.) Jerry was a delight to work with, but he traveled a lot and so I didn't see him all that often. He was a pipe smoker at that time, and although I was asthmatic and allergic to smoke, I developed a Pavlovian positive reaction to the smell of pipe smoke as I approached our office because that meant Jerry was there!

Jerry was a wonderful mentor, making me aware of the emerging clinical trial issues and controversies of the day, supporting my attendance at a series of annual conferences on clinical trials (whose organizers soon formed the Society for Clinical Trials), and introducing me to the statisticians and clinicians who were playing leadership roles in the then-emerging discipline of clinical trials. This was such an interesting world that I soon embarked on graduate studies in statistics so I could become part of it.

Several years after I began to work with Jerry, he assigned me the task of managing a small clinical trial being conducted by The George Washington University Medical School. Under his general supervision (but allowing me to work largely independently), I created the randomization plan, designed the case report forms, entered the data, wrote and ran the programs to edit the data, performed the analyses, and contributed to the writing of the manuscript. No experience could possibly have better prepared me for a career in clinical trials.

major chronic diseases. He was a major influence in the development and application of new methods for estimating the risk for a disease based on more than one potential etiologic factor.

In the span of three decades, Cornfield was a major contributor to resolution or partial resolution of a number of major public health issues (e.g., smoking and lung cancer, the safety of the polio vaccines, and, most recently, the difficult issues relating to the estimation of low-dose carcinogenic effects of food additives). Rick Wicklin mentions in his article, "Jerome Cornfield: The Statistician Who Established Risk Factors for Lung Cancer and Heart Disease," that Cornfield's true legacy is that today's statisticians continue to use the methods he introduced to understand the connection between risk factors and disease.

The controversies surrounding the nature of the studies providing evidence for the causes of disease led Jerry into the philosophical areas of the nature of proof and causation as applied to medicine, and he wrote several highly regarded papers on these issues.

In addition to his wide-ranging interests in applications, Jerry was constantly interested and involved in statistical theory and methodology. In one of his very early papers, he invented a method for easily obtaining the unbiased estimate of the variance when sampling from finite populations without being aware that he was using indicator functions. Reference has already been made to his work on the analysis of bioassay and to the theoretical work leading to the use of the cross-product ratio found in retrospective studies as an estimate of the relative risk. Independent work on the analysis of variance for the different models subsequently led to a collaborative effort with John Tukey that yielded an important unifying paper on the subject. As a result of his involvement in the Framingham Study, he developed the multiple logistic risk function based on a discriminant function approach. Finally, as a Bayesian, in addition to lectures and publications on the philosophical aspects of the Bayesian approach to statistical inference, he contributed technically to multivariate analysis, sequential clinical trials, and life table analysis. As quoted from Joel B. Greenhouse in "On Becoming a Bayesian: Early Correspondences Between J. Cornfield and L. J. Savage," Jerome Cornfield was arguably the leading proponent for the use of Bayesian methods in biostatistics during the 1960s.

Cornfield was active in many scientific societies. He was president of the American Statistical Association, 1974; president of the American Epidemiologic Society, 1972; vice president of the American Heart Association, 1970; and president of the Eastern North American Region of the International Biometrics Society, 1959–1960. He was a Fellow of the Institute of Mathematical Statistics, American Statistical Association, American Association for the Advancement of Science, and Council on Epidemiology of the American Heart Association, as well as a member of the International Statistical Institute.

He served in various editorial capacities and was a member of many advisory committees. Specifically, he served as a statistical advisor to the State of Pennsylvania in regard to the Three Mile Island incident.

Among his awards were the Superior Service Award from the Department of Health, Education, and Welfare (1967) and the National Institutes of Health Director's Award (1978). Behind all the scholarly and intellectual achievements, there was a warm, sociable human being, always inquisitive, always prepared to engage in conversation. He, himself, was very witty, but also enjoyed the wit of others, whether in conversation, literature, or the theater. Jerry was a great teacher, particularly in explaining statistical concepts and reasoning to clinicians and medical students. He was very gentle with graduate students and young statisticians, exercising great patience in introducing them to the insights he had in the solution of problems. ■

Meet Ivan Fellegi—A Man Who Beat the Odds and the System Many Times

Amy Munice

Ivan Fellegi, who held the office of Canada's chief statistician for 23 years, is a man who respects cleanly collected data with all underlying biases in the data well controlled.

That said, Ivan has had to make many personal decisions in his life without much data at all. Like many of us, his life story is one of pluck *and* luck—just more so on both counts.

Consider, for example, that 21-year-old Ivan had little data in 1956 when he and his cousin were broached with the choice of making a left or right turn at Hungary's border. One turn would land him in a Russian prison, while the opposite would lead to Austria and freedom. Which way was which?

Should they trust the local teen guides whom they just met because the pre-arranged smugglers had been busted?

That he lived to tell the tale tells us it was the correct choice, if not especially clean data driven.

But getting to that literal life-hinging turn in the road took far more than luck. Ivan's most able mother had arranged for the help of a physician who labeled Ivan a consumptive so he could gain entry to the highly patrolled but mine-free border area under the pretense of going to a TB sanatorium.

When Ivan and his cousin found that the pre-arranged smugglers were not available, they cajoled their hotelier to let them overstay their permit. That hotel concierge, when he realized what was what, then luckily turned into an ally allowing them to identify a couple of local teens who would help them through the mountains.

Lucky, too, that when the teens took them on a certain path, a woodcutter they met along the way took one look at the group and steered them away from the Russian patrols ahead. Trekking on, and laying low until nightfall, they braved forward, quipping that they'd know their fate as soon as a patrol greeting them spoke either German or Russian. Luckily, it was German voices that greeted them on the other side of the border.

Freed from the draconian Russian reaction to the Hungarian Uprising, Ivan was then on his way to Canada, where his six-year elder sister had settled



Ivan Fellegi

some six years before. He did not know at the time that he was a statistician or mathematician, certainly not that his skills would help him rise within Statistics Canada to be its chief for 23 years.

To others, it may have seemed like Ivan was already a mathematician. After all, he had placed in the top five of a national mathematics exam in Hungary in 1953 at a time when his more upper-class background without a top five national score would have had him barred from university altogether.

In reality, Ivan's early love was literature and poetry. By the age of 14, he had become the youngest member of the Hungarian Writers' Association. However, a precociously wise Ivan decided to leave his literary passions by the roadside when

Fellegi age 13



Fellegi age 8



Fellegi Career Milestones

Chief Statistician of Canada, 1985–2008, heading the statistical office ranked twice by *The Economist* as the best in the world

Chair, Conference of European Statisticians of the United Nations Economic Commission for Europe (1993–1997)

Past president of the International Statistical Institute, International Association of Survey Statisticians, and Statistical Society of Canada

Past chair of the Board of Governors, Carleton University (1995–1997)

Officer, Order of Canada; recipient of the Outstanding Achievement Award of the Public Service of Canada

Order of Merit of the Hungarian Republic; member of the Hungarian Academy of Sciences

Career Achievement Award of the Canadian Policy Research Initiative

La Médaille de la ville de Paris

Gold Medal by the Statistical Society of Canada

Robert Schuman Medal of the European Community

First doctorate awarded at Carleton University

Holder of honorary doctorates from Université de Montréal, Université du Québec à Montréal (Institut national de la recherche scientifique), Simon Fraser University, McMaster University, Carleton University

Honorary member of the International Statistical Institute and honorary fellow of the Royal Statistical Society



Fellegi with the love of his life: his wife, Marika; her maiden name was Gulyas.

he contemplated which exam to take to get into the university. Go for literature as his professions had urged? “No,” thought Ivan. Instead, he went and got one of the top five scores in mathematics. He thought correctly that a high score in mathematics would speak for itself, while any literary exam would always be open to interpretation, political or otherwise.

Even then, when navigating into university and certainly when he landed in Canada, Ivan was already well-versed in wielding a path through bureaucracy.

In Canada, there was also some luck at work, or was it luck?

Ivan reports that he was actually clueless that only Canadian citizens were allowed to work for government agencies unless they did so in shortage occupations. Even though he didn't have a degree per se as yet, his training in mathematics and probability were such that he was given a job at Statistics Canada when he applied and that is when and where Ivan discovered his true love was, in fact, statistics.

That meant that instead of following his sister and brother-in-law's advice to follow them in a career as a physician, Ivan decided to enroll in mathematics in the then young university originally established for returning veterans in Ottawa's Carleton University in Ottawa. Ivan Fellegi became Carleton's first PhD.

He continued to work at Statistics Canada and, in 1985, was appointed to the position of Chief Statistician of Canada, a role he filled for 23 years.

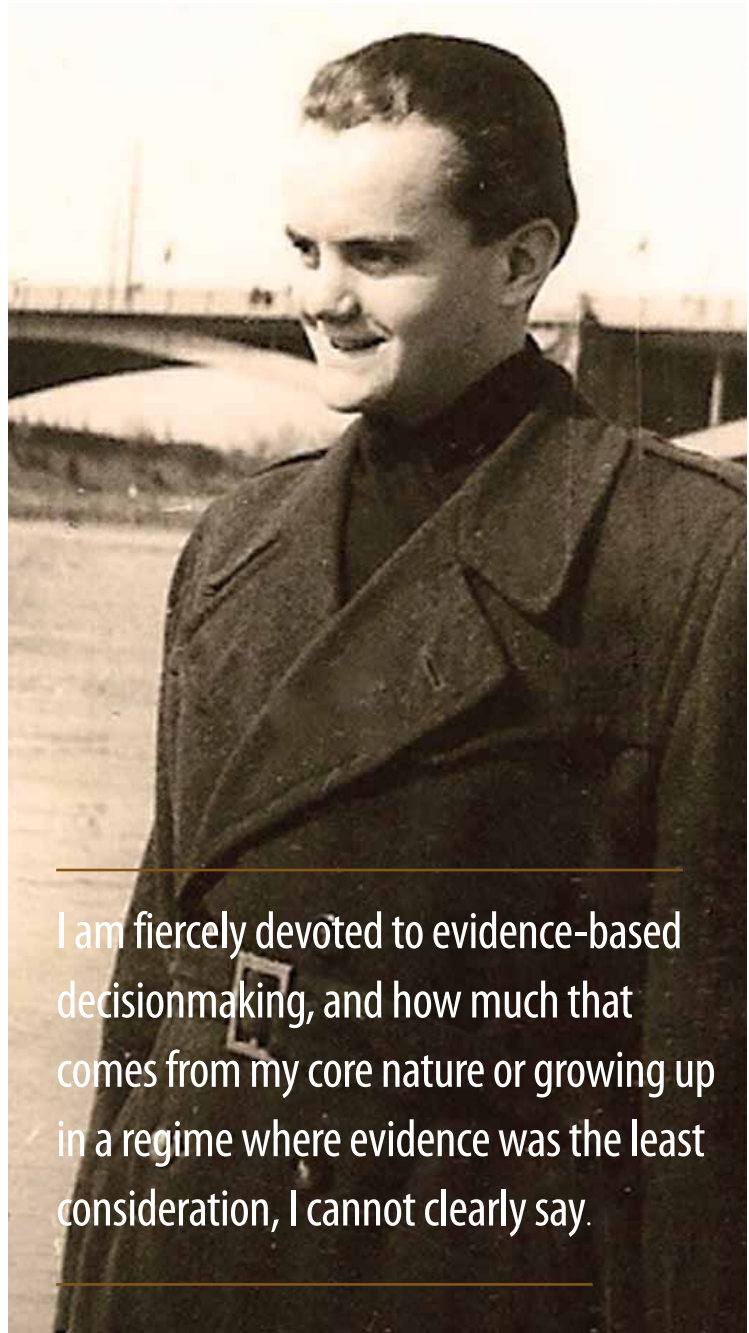
His continuing love for writing did perhaps make its mark, nonetheless. One of the first measures Ivan took as leader of Statistics Canada was to ensure that all public communications were written in plain speak. Then, as now, Ivan thought all Statistics Canada results needed to be put into a real-world context relating the story the data had to tell.

Ivan retired as chief statistician in 2008, but as luck would have it, something happened at Statistics Canada three years after his departure that revived Fellegi as an ardent spokesman against the politicalization of statistical research. Knowing his life history and childhood struggles against the Hungarian Communist bureaucracy, one can only think Ivan could have had no other reaction.

So it was that on a late Friday in July 2008, when the politically appointed minister with responsibility for Statistics Canada announced that the so-called long form—part of the national census—would become voluntary, Ivan Fellegi sprang back into public action. Perhaps, in part, this was because his early years were, if nothing else, training that political interference in science can be a deadly toxin to facts and democracy alike.

Fellegi comments, "In a communist regime, evidence doesn't count and only ideology matters. I am fiercely devoted to evidence-based decisionmaking, and how much that comes from my core nature or growing up in a regime where evidence was the least consideration, I cannot clearly say.

"It's not to say that I don't believe there is no room for political considerations in a democracy. There always is, but only after all evidence has been considered. One might say, 'The evidence says this, but my value system says something else, so I am going with that.' That is fine, but disregarding evidence altogether is very offensive to me.



Fellegi, age 18

I am fiercely devoted to evidence-based decisionmaking, and how much that comes from my core nature or growing up in a regime where evidence was the least consideration, I cannot clearly say.

"A government that decrees a voluntary census will not know which numbers are good and which are bad, so one must be very cautious about considering any such census information as true evidence."

Ivan, who has contributed to evidence-based decisionmaking for governments around the globe (see "Fellegi Career Milestones"), will not be swayed by those who pretend to ignore the difficulties of using biased data from voluntary censuses. ■

Charles Kincannon: Applying Statistics to the Public Service Sector

Jessie Biele



Charles Louis Kincannon

Charles Louis Kincannon, who was 72 when he passed away in December 2012, enjoyed a rich career in statistics lasting 45 years.

He was born right on the cusp of World War II in Waco, Texas. His father traveled often due to his work for a company that owned furniture stores. As a result, Kincannon's family moved frequently when he was a child. He recalled being enrolled in three schools each year from first to third grades, which made it challenging for him to form friendships.

"It was not normal and it made it difficult to make friends," Kincannon said in July 2012. "Beginning with third grade, we were more stable."

When Kincannon was in fourth grade, his family moved to Corpus Christi, Texas, where they remained through Kincannon's senior year of high school. He graduated from high school in 1959 and went on to major in economics at The University of Texas at Austin.

During his senior year of college, Kincannon received a telegram that would change the course of his life. The telegram was from Don Fay, who was then chief of the personnel division of the employee relations branch, asking Kincannon if he would be interested in a job in economic statistics or computer programming. Kincannon, who had never taken a statistics class before, took classes in both subjects during his last semester and found he preferred statistics over computer science.

In June 1963, Kincannon packed his bags and moved to Washington, DC. "At the end of the term, I went back home and packed up a suitcase and my belongings," he said. "I got a one-way ticket to Washington, where I'd never been before."

When Kincannon landed in Washington, he connected with a former high-school classmate who helped him adjust to his new home. Kincannon began work as a statistician in the food, textiles, apparel, and leather branch of the industry division of the U.S. Census Bureau soon afterward. He reported to then-Textiles

Section Chief Bob Nealon, who he counted as one of his mentors.

Kincannon was involved in the evaluation of the 1964 economic statistics census and traveled to Jeffersonville, Indiana, to evaluate surveys. His memories of Jeffersonville were of a "nitty-gritty place" without air conditioning.

"I was not involved in the planning of the economic statistics census, but I certainly was deeply involved in review of returned questionnaires," Kincannon said. "As a matter of fact, each of the analysts, statistical survey statisticians from the industry division, went to Indiana to where the questionnaires were returned and processed for a week or more at a time, and rotated back to Washington after being there."

Kincannon said that evaluating surveys was an "interesting" experience due to his interactions with business owners from across the country. "In general, [the surveys] were taken seriously and [business owners] cooperated with us," he said. "It wasn't a struggle. People in business understood it was important to their success." He continued, "It was a good induction into basic statistical work."

After a few years as a statistician in the industry division, Kincannon was encouraged by Nealon to sign up for an internship offered by the Census Bureau. He was interviewed by

a panel of executives and then placed in an assignment in the population division, where he was advised by Max Shor, a man he also considered a mentor. During his internship, he had an assignment in the Office of Business Economics near Dupont Circle, where he worked on input/output tables from the 1963 business census. After his internship ended in the early 1970s, he returned to the industry division, then the population division, and joined the staff of the Office of Management and Budget in 1975. While at the OMB, he worked on statistical and regulatory policy during the Ford Administration and then served as the statistical liaison to Vice President Nelson Rockefeller's office.

In September 1981, Kincannon returned to the Census Bureau and was appointed deputy director and chief operating officer in January 1982 by Bruce Chapman, President Reagan's first director of the Census Bureau. Kincannon also served as acting director from July 1983 to March 1984 and again in 1989. During that time, he directed the final preparations for the 1990 census.

"In a sense, [deputy director] is the most important job there because directors come and go," he said. "I served under three directors in the 10 years I was deputy, and sometimes deputies don't last so long either. You're really responsible as deputy director for pulling together the programs of the agency and maintaining its coherence and its long-run vision."

In 1992, Kincannon and his wife, Claire, moved to Paris after he was appointed as the first chief statistician at the Organization for Economic Co-operation and Development (OECD). He coordinated the organization's statistical programs and advised the OECD secretary general on



Louis Kincannon with Ivan Fellegi, 2002 Joint Statistical Meetings, New York City

I was convinced of its [ACS'] utility and was convinced it would be a miraculous improvement to have data for smaller areas once a year, instead of just every decade.

statistical policy. In June 2000, he left France to return to the United States. More than a year later, then-President George W. Bush nominated Kincannon for director of the Census Bureau.

Kincannon applied for the directorship in the spring of 2001 and recalled going through many interviews with Congress and the White House. "I had to fill out a relevant series of forms for the Senate committee conducting

the hearing and for the FBI," he said. "I had to go through an FBI investigation, and those were detailed."

The process was delayed after the 9/11 terrorist attacks occurred; however, the Senate confirmed him unanimously on March 13, 2002. Kincannon served as the director of the Census Bureau until his retirement in January 2008. He served just shy of six years, the longest of any

Photo courtesy of Charles Kincannon



Charles Louis Kincannon with his grandson, Aidan, on Father's Day 2012

director since the Eisenhower administration.

Of all his career accomplishments, Kincannon was most proud of his work on the American Community Survey during his tenure as director. “We had done planning and good formal testing of the ACS by the time I was named director,” he said. “I knew about the program and thought it was the most sensible thing to stop sending out the long form of the census when people are distracted by so many things. ... I was convinced of its utility and was convinced it would be a miraculous improvement to have data for smaller areas once a year, instead of just every decade.”

During his long career at the Census Bureau, Kincannon was honored with numerous awards,

including the Presidential Rank Award of Meritorious Executive, the Special Award for Excellence of the Interagency Committee on Information Resources Management, and the Commerce Department’s highest civil service honor, the Gold Medal.

Kincannon learned many important lessons throughout his lengthy career, especially that the census is more than just a survey people fill out every 10 years. He also stressed that diligent planning and good communication are essential for one’s success at the Census Bureau.

“Well, the census is very important to many groups in this country,” he said. “Minority groups, national origin groups, people in small towns and medium-sized cities, people in

big cities too, are very anxious to have accurate census figures because they affect the drawing of school boundaries, micro boundaries, bus and transportation services provided, and the location of stores. It’s not just an exercise for sociologists and economists; it is a practical tool of government at every level to plan and administer programs. The same thing is true for private businesses. Large retail groups especially make use of census results to make decisions for where to open stores, where the population has grown, and where per capita income has grown. I learned a lot about that and that you’d better be careful with your planning, listen to a lot of people, and convince them that you’ve heard what they’re saying and explain why you’re doing what you’re doing.”

Kincannon took post-graduate courses at Georgetown University, The George Washington University, and the University of Maryland, but he never earned a graduate degree.

“It was less important in those days,” he said. “Now a master’s, or even a PhD, is far more important.”

Kincannon resided in the Washington, DC, metropolitan area with his wife, Claire, at the time of his passing. He said of his wife, “She is the person who makes it possible for me to cope with my health problems. I could not live independently without her, even with the help of the village movement.”

To learn more about Kincannon’s career and life, visit www.census.gov/history/www/reference/oral_histories/c_louis_kincannon.html and www.knoxnews.com/news/2012/dec/27/c-louis-kincannon-former-head-of-census-bureau. ■

A Statistician's Journey

There are many routes a statistician can take to reach an area to study. In an effort to get to know these routes, we asked a few ASA members to answer questions about the paths they took to get where they are today.

What or who inspired you to be a statistician?

Well, I don't consider myself to be a statistician. I'm a survey methodologist with, at best, a cursory understanding of social statistics. That said, I pursued graduate studies that included statistics because of a social statistics course I took in undergraduate school. I loved learning different statistical methods that could be applied to solve real-life problems.

What is the most exciting part of your job?

I love exploring data sets and testing out different hypotheses. It's somewhat like peeling an onion ... the answer is rarely on the surface, but more often several layers down.

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

Critical thinking. Statistical programming. Keeping up with the academic literature. Developing a thick skin doesn't hurt either.

What is a skill you would like to learn to be better at your job?

My programming skills have eroded over the years. I should probably learn R, but I'm too lazy.

Did you have a mentor? If so, what was the most effective advice he/she gave you?

Earlier in my career, I was lucky to work for three ASA Fellows—all of them women. They include Cynthia Clark, Elizabeth (Betsy) Martin, and Pat Doyle. They didn't give me advice so much as give me opportunities to learn and advance.



Nancy Bates

Senior Researcher for Survey Methodology
U.S. Census Bureau

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

I don't follow blogs. I love Patricia Highsmith and Jeanette Winterson. *Written on the Body* is probably my favorite book.

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

Work an internship. Volunteer for the tough assignments. Join professional organizations, then get involved in committees and run for offices. Attend the conferences so you can present your work and meet colleagues to collaborate with.

What do you enjoy doing in your spare time?

Playing outdoor Ping-Pong and training for occasional races (running barefoot). ■



Robert D. Gibbons

Professor of Biostatistics, Departments of Health Studies and Medicine, Director of the Center for Health Statistics
The University of Chicago

What or who inspired you to be a statistician?

Life is a lot like learning to ski; it is a series of linked recoveries. My path to statistics is no exception to this rule; in fact, it is a product of it. I was living in Colorado and was a pretty good skier. I was taking the instructor class at Vail, which was taught by two professors of geology at The University of Arizona who taught in the summer so they could take the winter off and teach skiing. I was immediately attracted to this idea. The only thing I was good at was math and, at the time, I was taking a statistics course and thought it was ridiculously easy. Path of least resistance ... become a statistics professor and teach skiing in the winter. No brainer. I did the first part, but unfortunately grew up and never did the second.

What is the most exciting part of your job?

Two-fold, but always linked to applications. I really enjoy interactions with substantive scientists who have interesting problems in need of some statistical solution. But the best part is when the solution needed does not exist, leading to the development of a fundamentally new statistical solution to an interesting problem. I teach this in my class, statistical applications at The University of Chicago, where, after the second week, I invite university faculty to present problems to the class that are causing them statistical nightmares. As a group, we work on their solutions. Very much in the spirit of Paul Meier, Lincoln Moses, etc.

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

Well, you need to be reasonably good in mathematics, but, of course, that fades with age (like everything else). Mostly, you need to be a good listener and really be excited by what you do. Lincoln Moses said that you need to have “a good data-side manner.” I think this is really important. I think an often overlooked component of statistical research is implementation. There are so many amazing ideas and methods that never flourish because they are published and forgotten. If you have a really good idea, you have to sell it so it becomes a part of practice and, in turn, other statisticians will improve

upon it. Often, this involves the dual publication of papers in both statistical and applied journals. I also think it is important to know how to program in a real language, not just a statistical package like R or STATA or SAS. In this way, you can develop programs that implement new methods that can be offered widely (and often freely) to practitioners who really need them.

What is a skill you would like to learn to be better at your job?

I would like to continue to grow as a teacher. Much of my early career involved mentoring students, but not teaching. Now that I have returned to The University of Chicago, I teach regularly and really enjoy it, but I have a lot of room for improvement.

Did you have a mentor? If so, what was the most effective advice he/she gave you?

I was fortunate to have several great mentors from several areas of the statistical sciences at The University of Chicago: Darrell Bock from education and the behavioral sciences, Jim Heckman from economics, and David Wallace from statistics. Darrell taught me to be thorough in my statistical work and the importance of disseminating my statistical contributions through the development of computer programs that ultimately lead to widespread use of your ideas. Jim taught me the importance of letting important public policy problems motivate your statistical work. David taught me that there are a great many ways to solve an interesting statistical problem and the best one is not always the most statistically complex one.

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

Two of my favorite books are Darrell Bock's book *Multivariate Statistical Methods in Behavioral Research*, originally published in 1975, and Joe Fleiss's book *Statistical Methods for Rates and Proportions*, originally published in 1973. There are, of course, far more modern treatments of these subjects, but I consider both of these to be foundational contributions.

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

Statistics is like dating; you should marry for love, but hang around wealthy people. If you are going to go to the trouble of doing applied work, make sure you work on something that matters. Statisticians spend way too much time working on problems that are just not that important. It is just as difficult to work on an unimportant problem as it is to work on an important problem, so focus on important problems. Be passionate about your work. Passion is infectious.

What do you enjoy doing in your spare time?

What spare time? ■



Jo Hardin

Associate Professor of Mathematics
Pomona College

What or who inspired you to be a statistician?

When I got to college, I thought I wanted to be an actuary, and then I fell in love with my undergraduate institution. My statistics professor, Don Bentley, helped me to know that I could do statistics and be at a small liberal arts college at the same time. I am incredibly happy teaching at a small college, where I believe I get the best of all worlds (research, teaching, good students, great community).

What is the most exciting part of your job?

Working closely with undergraduates. At Pomona, we have bright, engaged, and incredibly interesting students. It is my pleasure to work closely with them in the classroom, doing research and discussing life. I am constantly in awe of all their ideas and accomplishments.

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

Much of teaching and research boils down to being a good communicator. And like everything else in life, being a good communicator takes practice. Anyone looking to build skills should try to find opportunities to present themselves: give talks, present research, write-up research (in both academic and general audience venues), teach classes, practice communicating as much as possible.

What is a skill you would like to learn to be better at your job?

Despite tenure, teaching awards, and other accolades, I have a tendency to second guess myself and come across as less knowledgeable than I am. Every day, I work on being more confident, and as Sheryl Sandberg would say, “Leaning in.”

Did you have a mentor? If so, what was the most effective advice he/she gave you?

My closest mentor is my post-doc advisor, John Crowley, CEO and statistician at Cancer Research and Biostatistics. He taught me to care about how my work fits into the larger community of scientific research. While working with John, I saw the immediate impact our work had on clinical decisions affecting cancer patients. The world needs people who understand applied and quantitative science and who care enough to put them together.

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

One of my favorite books is *Ship of Gold in the Deep Blue Sea*. It is a fascinating true story of a boat that sunk in 1857 carrying California gold back to the East Coast. (Though nonfiction, it is a page turner!)

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

Just say, “Yes.” Many years ago, I was given the same advice by Joe Gallian, a mathematician at the University of Minnesota, Duluth. You can’t possibly know the impact of a particular committee, project, or opportunity until you’ve done it. Throughout my career, some of the best ideas for my teaching and research have come from the most unlikely places. Sometimes, completely inopportune tasks have been incredibly valuable for networking, generating ideas, and providing balance in my professional life.

What do you enjoy doing in your spare time?

My favorite spare time activity is running, which is the most gratifying way for me to turn off my brain. I ran my third marathon last year, and I hope to be able to run more in the near future. ■



Cheryl Pammer
User Experience Designer
Minitab Inc.

What or who inspired you to be a statistician?

I was working on my undergraduate degree in math education at Truman State University and really enjoyed the probability and statistics class I was taking with Dr. James Guffey. Dr. Guffey offered me the opportunity to work on a research project using the randomized response technique to estimate rates of cheating behavior among college students. I became so interested in the field of probability and statistics that I abandoned my plans to become a high-school teacher and decided to go on to graduate school in statistics at Penn State.

What is the most exciting part of your job?

A tremendous amount of data exists out there, most of it being analyzed without the help of a degreed or accredited statistician. As a designer of statistical software, my main goal is to promote good statistical practices by presenting appropriate choices to the software user and displaying results in a meaningful way. It is exciting to know that the work I do makes a difference in how thousands of people will use and interpret the data they have.

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

The most important skill I need to do my job is a real understanding of the problems practitioners are trying to solve so I can find ways to guide them to the correct solutions. To do this, I need a strong understanding of both the real-world statistical problems as well as the appropriate statistical techniques that will adequately solve these problems.

What is a skill you would like to learn to be better at your job?

Keeping up with the latest research on how people interact with software is a high priority for me. The field of user experience design is fairly new within the software industry. There was a time when computers were only used by highly technical people.

Now, everyone is using a computer and expectations have risen in terms of making software intuitive and easy to use.

Understanding what type of work needs to be done on what type of device is also important, because people are starting to do some of their work outside of a desktop computer environment.

Did you have a mentor? If so, what was the most effective advice he/she gave you?

I have had too many mentors to mention by name. I am very fortunate to work in a highly cooperative, team-oriented environment with many helpful, smart people. Some serve as my statistical mentors, others keep me connected with the latest ideas around software design, and yet others are great role models with regard to their leadership skills. Probably the best advice I ever received was to recognize what you don't know. No one is an expert in everything. Whether you are performing data analysis or solving some other business problem, it is often advisable to run your ideas by a few colleagues. When you access the collective knowledge of others, you will not only continue to learn, but you will also be equipped to provide better solutions.

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

This is biased, of course, but for a relevant and entertaining look at current applications of statistics, I have to give a shout out to the Minitab blog, <http://blog.minitab.com>.

My book recommendation would be *Bellwether* by Connie Willis. It is a fun, light read with a main character that happens to have a PhD in statistics. (It's not often that a novel highlights the work of a statistician, right?)

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

It's an exciting time for a statistician. Companies are collecting more data than ever, so there is no shortage of data to be analyzed. But, data analysis is as much of an art as a science, and the only way to become proficient is to practice. I would recommend taking every opportunity you can to analyze real data. For example, look at a friend's dissertation research or find the data talked about on a news report and do your own analysis.

What do you enjoy doing in your spare time?

I enjoy reading, quilting, biking, and spending time with my husband and three children. ■

Working as a Quantitative Ecologist and Beyond

Penelope S. Pooler

For the past seven years, I have worked as a quantitative ecologist for the Inventory and Monitoring (I&M) program in the National Park Service (NPS), first in a post-doc position through annual contract agreements and then as a full-time permanent government employee. In many ways, a position like this was the reason I went into statistics (i.e., to use my quantitative skills to work with ecologists to answer challenging questions).

A quantitative ecologist, or a biological statistician, is an applied statistician who focuses on answering questions in natural resources science (e.g., ecology, fisheries and wildlife, soil science, forestry, etc.). The research questions we work on are often complex, and the people who collect these data are passionate about their research and helping further our understanding of the animals, plants, or ecosystem being studied.

In my work for the NPS, I primarily focused on salt marsh and coastal ecology. My role was to provide input about how best to design long-term monitoring studies on an extremely tight budget that adequately answered our questions in a reasonable amount of time and answer research questions by analyzing the data that sometimes required development of interesting statistical models. Examples of projects I worked on include monitoring water quality and sea grass distribution and density at northeastern coastal parks. I collaborated with researchers to develop the sampling designs and subsequently analyze the data using linear mixed models. As with any position, there was also a fair amount of data management and report writing, but the work was diverse and interesting.

I also was fortunate because our NPS office was based in the

natural resources science department of the University of Rhode Island (URI-NRS). As part of the NPS agreement to rent space there, I taught a graduate-level applied statistics course designed for students in life sciences. I have taught at all college levels, but teaching graduate students engaged in their own research is particularly satisfying because they are excited to learn how to design their own studies and implement analyses that provide the most information. Through my teaching, I had the opportunity to meet students and collaborate with both graduate students and faculty members on their projects and publications. This aspect of my position was rewarding, but it was challenging to balance my work for URI-NRS with my work for the NPS.

To be competitive for a position like this, it's a good idea to take classes in natural resources such as ecology, GIS courses, etc. Most federal quantitative ecologist or biological statistician positions require a minimum of nine credits of ecology coursework. These courses can be anything, but the human resources staff members who review your job application will be looking for courses with ecology, biology, or natural resources in the title. The people who are charged with the first step in the applicant review process are not scientists and are typically quite rigid about the core requirements; if you apply, you need to make it clear to them that you meet the criteria for the series and grade outlined by the Office of Personnel Management.

It is also helpful to get as much consulting experience as you can while in graduate school. The more clients you work with from



different fields, the better you will be able to communicate with nonstatisticians and scientists from a variety of disciplines.

Last, ecological scientists are eager to use Bayesian analytical methods and usually have small operating budgets. Becoming familiar with Bayesian modeling and how to use R and compatible Bayesian software, which are free, will give you a competitive edge when applying for these positions.

Although I genuinely enjoyed my work with the NPS at URI, my family recently relocated to Syracuse, New York, because my husband was offered a great position at the State University of New York College of Environmental Science and Forestry. I was able to work remotely for the NPS for six months until I went on maternity leave. When our baby turned six months old, I went back to work part-time as an independent consultant. I was subsequently hired by the State University of New York Upstate Medical University as a senior biostatistician in the Center for Research and Evaluation, the consulting center of the Department of Public Health and Preventive Medicine. Before taking this position, I had decided to change my focus from pure ecology to public health. I am particularly excited about expanding into research that looks at the relationship between environmental degradation and public health risks.

My previous work collaborating on large scale federal ecological monitoring programs, along with the valuable experience I'm getting now will help me reach my goal of an academic faculty position in public health. ■



Pooler

A Newton's cradle with five balls. The leftmost ball is red and is in motion, having just struck or about to strike the other balls. The other four balls are blue. The background is a solid blue color.

INFLUENCE:

Essential for Success as a STATISTICIAN

Paul Berg, Senior Research Scientist, Statistics, Eli Lilly

Although the acquisition and application of statistical skills is a necessary step in achieving success as a professional statistician, it is not sufficient. One also must develop the ability to influence customers, colleagues, managers, and subordinates. This can be especially problematic when those you are trying to influence are not statistically savvy and you must convince them of the merits of a particular statistical approach.

Consider the targets of your influence. First, there are your customers—those people who

need your statistical know-how to achieve their goals. It is by influencing them that they will adopt your methods and results; if your customer rejects either of these, then your success (on that project, at least) will be in jeopardy. Your boss is also a key target of your influence; by influencing her, you are more likely to receive choice assignments and career-advancing opportunities. If you supervise others, influencing them is key. You get much better performance if your subordinates are personally invested, rather than just

following orders. And finally, consider your peers—those targets of influence who may be reviewing your work or leveraging your contributions and telling the stories at your retirement party.

Establishing rapport is important in any relationship and key to paving the way for influence. To start establishing rapport, you can use names and repeat and approve. Most of us like hearing our names spoken, and we react with pleasant feelings toward the speaker. So learn the other person's name and use it in conversation. This can be difficult when first meeting people, but the effort you put forth to learn and remember names will be appreciated and pay off down the road. Repeat and approve is applicable whether you are asking questions or giving answers. You might say, "I understand you would like to know why we recommend covariate adjustment [repeat]; that is a great question [approve]." Alternatively, "You're telling me you would like to do a CART analysis [repeat]; that is a very appealing option [approve]."

Other techniques for establishing rapport require more practice. Mirroring is copying certain behaviors from another person while interacting with him or her, such as gestures, body language, tone of voice, or choice of metaphors. Reciprocity is offering something up front, hoping the other person will give you what you want in the end. (Think about those "free" cookies at a car dealership.) Commonality is highlighting similarities between you and the other person. All these can help make others more positively disposed toward you, thus increasing your ability to influence them.

Often, when attempting to exert influence, you will find yourself in a negotiation—where you and the other person, each starting with different ideas, are trying to reach an agreement. Two key concepts in negotiations are (1) the difference between positions and interests and (2) BATNA. Your interest is what you're really concerned about, while your position is a way you think you can achieve that interest. For example, your interest might be "I want more responsibility in my job" while you might take the position of "You should give me a promotion." Keeping in mind your interest(s), and not clinging inflexibly to positions, is often helpful in negotiations.

BATNA stands for Best Alternative To a Negotiated Agreement; it is what you will do if your negotiation does not work out. You should know your BATNA before going into a negotiation, so you can judge the relative merits of options given by the other person. Also, think about what the other person's BATNA might be, so you can judge the relative merits of the options you are providing.

When it comes to motivating others, two general categories of motivating forces are extrinsic motivators and intrinsic motivators. Extrinsic motivators are often called "carrots and sticks," because they can either be rewards (carrots) to encourage certain behavior or punishments (sticks) to discourage certain behaviors. Examples include wages (do this work and you get this money) and speeding tickets (break this law and you pay this fine). These tend to appeal to our more basic desires and are useful in motivating specific, objective behavior. Intrinsic motivators, however, are necessary to unleash the full potential

The better way to make the other person believe you are an expert is to provide evidence that supports your position.

of creative and knowledge-based workers. These are the good feelings you get when you do a job well, when you solve a difficult problem, or when you create something new. Dan Pink, in his book *Drive*, advocated for the emphasis of three intrinsic motivators in the modern workplace: autonomy, mastery, and purpose.

Finally, I want to address tips for communicating that can help you get your point across and, therefore, increase your influence. First, avoid technical jargon that the other person is not likely to understand. The better way to make the other person believe you are an expert is to provide evidence that supports your position. So, speak their language and use imagery that will appeal to them. This may require some preparation on your part to familiarize yourself with the vocabulary and terminology used in the other person's field of study or culture. Last, admit your limitations. Not only will this help the other person evaluate your methods, results, positions, etc., but it also signals to the other person that you have thought about the issues from different angles and understand the big picture.

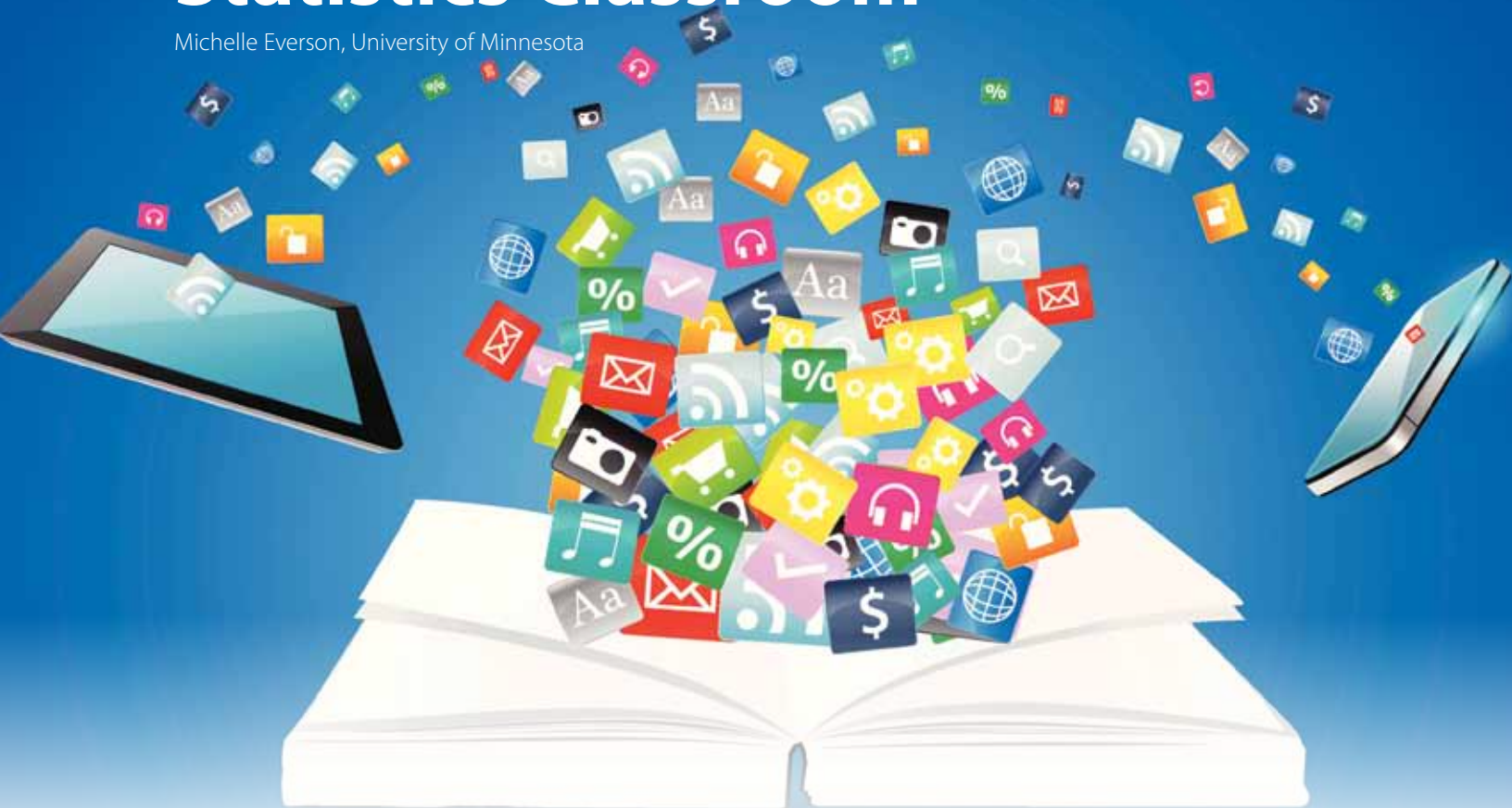
The ability to influence is key to a successful career; the topics presented here are considerations I have found useful in my career. The last thought I will leave you with is that, in many cases, influence wins out over authority. ■



Paul H. Berg has worked at Eli Lilly and Company for 15 years as a clinical statistician in the neuroscience and internal medicine therapeutic areas. He also works with the leadership development and quality culture initiatives in the statistics organization at Lilly. Berg earned his bachelor's degree from the University of Notre Dame and his master's degree from the Medical University of South Carolina.

Incorporating Social Media in the Statistics Classroom

Michelle Everson, University of Minnesota



Michelle Everson is a senior lecturer in the quantitative methods in education track within the department of educational psychology at the University of Minnesota. She is editor of the *Journal of Statistics Education* and the program chair for the 2014 Electronic Conference on Teaching Statistics (eCOTS) through the Consortium for the Advancement of Undergraduate Statistics Education (CAUSE).

For several years, I have enjoyed using Facebook, primarily because it has been a great way for me to meet, get to know, and collaborate with other statistics educators. I see social media as providing professionals with so many ways to connect and extend the discussions they might begin in professional settings such as conferences. My love of teaching, coupled with my fascination with the power of social media, led me to question how tools like Facebook and Twitter might be used for instructional purposes as well. I know my students are sometimes distracted by social media when they should be paying attention in the statistics classroom. Rather than try to compete with social media, I began to wonder if I could motivate and engage them by incorporating social media into the curriculum.

I have experimented with different ways to use Facebook and Twitter in my introductory statistics courses. My interest in this topic led to a roundtable discussion that I facilitated at the 2012 Joint Statistical Meetings (JSM), titled “Using Social Media to Engage and Motivate the Modern Statistics Student.” Soon

after JSM, I wrote an article with Ellen Gundlach and Jackie Miller, titled “Social Media and the Introductory Statistics Course,” which is now in press in the journal *Computers in Human Behavior*. The ideas and tips I am sharing here come from both the JSM roundtable and this article.

Much of what I have done in my own classroom has been informed by the work of others who have attempted to explore the role of social media in the college classroom. My use of social media began in the summer of 2009 and involved Twitter. I asked my students—as part of an optional, extra-credit project in a graduate-level introductory statistics course—to sign up for a Twitter account and use Twitter to share articles they found in the media that related to content they were learning in my course.

Because an individual is limited to 140 characters when using Twitter, I encouraged my students to be precise in their tweets, and I showed them how to use tools such as bit.ly and tinyurl.com to shorten the links to media articles. To receive credit for a tweet, my students needed to share a short question or critique about the media article, along with a link

to the article and a hashtag (such as #epsy5261) that would allow me to easily search for and archive the tweets. To get them started, I shared some sample tweets, much like the following:

- Pressure to have perfect body starts early. Subjects were from Canada. Can we generalize to U.S.? <http://bit.ly/bOS8h> #epsy5261
- Tall people happier? I like that they are at least exploring possible confounding variables here. <http://bit.ly/10ndD7> #epsy5261
- This article begins with an interesting claim. How might we test which lasts longer—canned or boxed food? <http://bit.ly/aQ6xr> #epsy5261

It was exciting that summer to see how engaged students were when it came to using Twitter. Out of the 18 students in my class, 17 engaged in the extra-credit assignment, and the student who elected not to use Twitter was able to select an alternative extra-credit assignment to complete. Students could get up to 10 extra-credit points (one for each tweet), and I often came to class to find students talking about the assignment or searching online for links to articles they might be able to share.

I tried the Twitter assignment again in the fall of 2009, this time with four larger courses (two graduate and two undergraduate). Roughly one-quarter to one-third of the students in each course elected to use Twitter.

I began to find it a little challenging to keep track of all the tweets, primarily because of changes in Twitter in terms of how long certain hashtags are active. Feedback from my students made me question if Facebook might be a better option for this kind of assignment. Not all students had Twitter accounts, but several said they would be more inclined to participate in an assignment of this nature were it to involve Facebook. I knew Facebook would allow students to write more about their chosen media articles, and I thought Facebook might also more easily allow students to reflect on and respond to the articles shared by their peers.

I now routinely incorporate an assignment in my graduate-level introductory statistics course in which students have the option to earn course credit by either critiquing a journal article from their field of study, creating a YouTube video to teach an important concept or topic to their peers, or share and discuss links to media reports in a private Facebook group I set up for the course. Each semester when I use this assignment, approximately one-fourth to one-third of my students choose to complete the assignment by joining and posting in our course Facebook group.

Further Reading

Web resources

FERPA and social media: <http://bit.ly/125kkC1>

Pros and cons of social media: <http://bit.ly/13kLN5w>

Tips for integrating social media into the classroom: <http://on.mash.to/14M4MqG>

Facebook in the classroom: <http://bit.ly/1cCt9u2y>

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I have enjoyed seeing how engaged my students become in this assignment, but I also recognize that not all instructors feel as comfortable trying to incorporate social media into their courses. If I had to give advice to other instructors, I would share the following tips:

Tip #1: Don't just use social media for the sake of using social media.

In 2011, an article from *The Atlantic* (<http://bit.ly/1cuPVUC>) focused on the “slow slog” of social media into the ivory towers of academia. One particular quote from this article resonated with me: “As faculty, we’re always trying to engage our students better,” Smith-Robbins says. “If we see them using a tool like Facebook, there’s this huge temptation to say, ‘Well, I use Facebook in class,’ because that’s where they’re at. More times than not, it doesn’t work because it has to be a pedagogical decision first, rather than a technology decision. Plus, all these tools have their own culture and if you try to use them for something different, you’re more often than not going to make mistakes.”

Initially, my choice to use social media stemmed from my belief that it might motivate and engage my students. I wanted to provide my students with as many opportunities as possible to apply what

they were learning in my classroom to news reports they were exposed to on a daily basis. I thought social media would be an excellent way for students to share resources and critique media reports, and I thought carefully of a meaningful assignment I could incorporate into my course that would involve the use of social media.

I could have easily set up a similar assignment using a learning management system such as Blackboard or Moodle, and I did try to do this at one point by setting up a special discussion forum within an online course site for students to post links to media reports and discuss these links. For me, this didn’t work as well as Facebook. I liked that students could much more easily copy and paste links into Facebook, and these links would automatically become “clickable,” oftentimes with photos from the original article automatically appearing along with the first few sentences of that article.

When students used discussion forums within a learning management system to post links, they sometimes needed to do extra work to make sure others could click on the links and be led to specific websites, and the way in which this was done was not always intuitive for all students. I like the way Facebook looks, and I like that students can easily reply to particular posts and clearly see the

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... Using Facebook has been a great way to connect students who are enrolled in different sections of the same course.

string of responses to a given post. Students also can get a better sense of how many other students have viewed their posts, and using Facebook has been a great way to connect students who are enrolled in different sections of the same course.

As our own review of the literature revealed, there are many pros when it comes to using social media in the classroom, such as student familiarity with and comfort with social media tools; networking skills students might develop; the possibility of immediate feedback (by other students in class or the instructor); the ease in which questions, links to websites, and images can be posted; and the ready availability of social media. Certainly, however, instructors also need to consider several reported cons of using social media in the classroom, such as the possibility of it being a distraction, the potential for cyber bullying or cheating among students, the possibility that not all students will have easy access to social media or be comfortable using it, and issues related to privacy. A decision to use social media in the classroom should involve a careful weighing of the pros and cons.

Although I have used social media in a particular way in my classroom, there are many ways social media can be used. Our review of the literature revealed many interesting ways instructors in various fields are using social media in their classrooms. Instructors might set up a Facebook group as a way of sharing resources with students, making announcements, and answering student questions outside of class, for example. Twitter might be used in the classroom as a “backchannel,” where students can post questions during a lecture and receive answers from an instructor or teaching assistant who is able to monitor the Twitter feed during class.

Tip #2: Be aware of privacy settings within Facebook and privacy issues.

When I started using Facebook in my courses, I surveyed students to find out more about why some chose to use Facebook and some did not. One student who did not choose to use Facebook mentioned a concern about other students in the course finding out private information about her or being able to view her Facebook profile. This made me realize that not all students may know how to ensure certain Facebook



privacy settings are turned on. I now make it a point to mention this to my students, and an instructor who has concerns about this can easily show students how to check privacy settings.

Any instructor who chooses to use social media in his or her classroom should consider how the use of social media will adhere to the Family Educational Rights and Privacy Act (FERPA). In my classroom, I set up a private group for students that they have to request to join, and I never post any information in this forum related to student grades.

Fall Outreach Symposium Needs Participants

Participants are needed to give a short talk about employment and careers for the Fall Outreach Symposium, hosted by the Bureau of Labor Statistics, November 13–14. The event will provide students with an opportunity to learn the hiring process and job qualifications for various U.S. federal statistical agencies.

If your agency is willing to present a 15–20-minute session or poster during the symposium, please contact Yan Liu at yan.k.liu@irs.gov to volunteer.

Visit the Bureau of Labor Statistics website, www.bls.gov/osmr/international_year_of_statistics_home.htm, for details.

Tip #3: Don't assume all students are tech savvy or comfortable with social media.

An instructor who wishes to use social media in his or her classroom may need to engage in direct instruction with students about how to use it or easily find and join a special group set up for the course. Although many students do have Facebook accounts, not all will be comfortable using Facebook for educational purposes.

I have had students over the years who have elected not to use Facebook because they fear mixing their personal lives with their educational lives. I never force my students to use social media if they do not want to, and I believe using social media should be a choice on the part of students. It's for this reason that the use of social media is either extra credit in my courses or it's one of several options for students to pursue to complete a particular assignment.

Instructors who are considering using social media in their classrooms should think carefully about alternative assignments they can create for students who do not have social media accounts or who are not comfortable using social media in the classroom. Further, an instructor who chooses to use something like Facebook to make announcements or share resources with students should consider ways to share that information with students who have not elected to be a part of the Facebook group.

Tip #4: Think carefully about "friend-ing" students.

Fortunately, I have not had any problems in terms of students sending me Facebook "friend" requests while a course is under way. If you choose to use social media, it's important that you think carefully about how you would handle such requests.

Interestingly, in our own review of the literature on social media use for educational purposes, we came upon many schools of thought on the issue. Some instructors believe they might be perceived as more approachable or credible if they can connect on a more personal level with their students, while others want to keep their personal lives private.

There is also the issue of the kind of information instructors become privy to if they are "friends" with their students. What if you become "friends" with a student who then starts complaining about your class all the time, or who behaves in a way you think could be harmful to that student or others? The decision about how to handle "friend" requests needs to be made in a thoughtful way, and it's obviously a personal decision that each instructor will need to wrestle with.

Tip #5: Think carefully about how you will monitor and keep track of student work.

The ease with which it will be possible to track what students are doing and archive this information, especially if student grades are dependent on what they post using social media, is an important consideration. Each time a student posts a new message in my course Facebook group, I get an email message about this, and this is something I can easily save in a folder and come back to later if I need to. This is a helpful way for me to keep track of things. There are now ways you can "like" posts on Facebook, and I keep track of what I have read simply by making sure to "like" that post. I also make sure to set up a spreadsheet I can use during the semester to mark the number of media articles students post, in addition to the number of times students respond to what their peers have posted. ■

Plantistics

Bin Yao

Through trial and error,
 I must face the terror;
 With all care and power,
 My plants wear no flower,
 Withered stem and leaf,
 There is no sign of relief.
 I protest any rash inference,
 Blaming my indifference;
 I dare not mean formal,
 Just try to be normal.
 O confidence, help me get over this interval,
 It is no trifle, rather a matter of survival.

 Sun, water, and degree of freedom,
 Why is your love so random?
 O lies, damned lies, and statistics -
 Futility is pronounced by skeptics.
 Isn't the dull man sure, and the sure man dull?
 From zero to hero, expectation is no longer null.
 Dance with chance like a statistician,
 Dreaming the magic of a magician;
 Life, with its variance of treatments,
 Is full of moments!

Post-doctoral Positions: A Path from Graduate School to Career

Jamie Nunnally, Communications Director for National Institute of Statistical Sciences

Making the transition between graduate school and a new career can be daunting. Academia guides people each step of the way, checking a person's work and telling them what to do and how to think about a particular topic, but life outside of the classroom is different.

One way to ease this transition is to take a post-doctoral position. These positions last for one to three years and allow a person entering the work force an opportunity to think and act independently.

The National Institute of Statistical Sciences (NISS) offers a post-doctoral program that is one of the largest, and most successful in statistics. It has provided strong impetus to more than 80 early career researchers, who have all gone on to successful careers.

One of the post-doctoral fellows who benefited from the NISS program is George Luta, an assistant professor in the department of biostatistics, bioinformatics, and biomathematics at Georgetown University Medical Center. The department is part of the Lombardi Comprehensive Cancer Center (LCCC) at Georgetown, so much of Luta's activity involves collaborative cancer research.

Luta studied at The University of North Carolina at Chapel Hill (UNC). He heard NISS offered post-doctoral positions as he was finishing his PhD in biostatistics and decided to apply. He was a post-doctoral fellow at NISS from August 2006 to August 2007 and undertook varied assignments. One was with Alan Karr, director of NISS, on an expert task force on effect sizes (which distinguish "practical significance" from statistical significance in a domain-specific manner) for the National Center for Education Statistics (NCES). Luta undertook an extensive background study on effect sizes, which enabled the task force to make specific actionable recommendations to NCES.

Luta also worked with Nell Sedransk, associate director of NISS, on a research project involving the measurement of the QT intervals for electrocardiograms. The length of the QT interval, which can be indicative of adverse side effects, is often used when evaluating a new drug going through the U.S. Food and Drug Administration's approval process. NISS worked on developing new methodology to measure the QT intervals. Luta and Sedransk identified the scope of work and started getting the right cross-disciplinary partners to join in the research. Later, S. Stanley Young, assistant director for bioinformatics at NISS, and some of his former colleagues from Eli Lilly

also worked on a QT interval project. The research led to a paper by Luta and the colleagues at Lilly, "Sample Size Calculations in Thorough QT Studies," which appeared in the *Journal of Biopharmaceutical Statistics* in 2008.

"I really enjoyed being part of an interdisciplinary team," remarked Luta about his experience at NISS. "The teams would write white papers describing step by step what needs to be done to solve a specific problem, and then they will start doing the research work. What I do now at Georgetown is a continuation of that type of collaborative research. It's what they call team science or ensemble science. . . . Team-based research makes the statistician an equal player at the table and recognizes intellectual contributions above and beyond his/her statistical expertise," noted Luta.

Collaborating with other post-docs was also something Luta enjoyed during his time at NISS. He and Michael Last, another NISS post-doc, collaborated on a research project also involving Young. This resulted in a paper, "Pooled ANOVA," that was published in 2008 in *Computational Statistics and Data Analysis*.

As Luta's year was ending at NISS, the staff helped him prepare for job interviews. They gave him feedback on his presentations, helped him prepare relevant questions to ask, and gave him advice about the interviewing process. Luta interviewed with Georgetown University while he was still at NISS.

Currently, Luta is collaborating with researchers from the Lombardi Comprehensive Cancer Center on cancer control and prevention, although some of his research work is in bioinformatics. Luta said he learned bioinformatics methods while at UNC and NISS. Specifically, Young introduced him to the non-negative matrix factorization, a methodology that he used while participating with two of his students in a competition to analyze flow cytometry data. The results from the competition were published in *Nature Methods* this year in a paper titled, "Critical Assessment of Automated Flow Cytometry Data Analysis Techniques." Luta also contributed at a session organized by Young at JSM 2013 on non-negative matrix factorization.

Luta pointed out that it was really great that the Statistical and Applied Mathematical Sciences Institute (SAMSI) is located in the same building as NISS, allowing NISS post-docs the opportunity to attend SAMSI workshops and interact with SAMSI post-docs.

NISS typically advertises for post-doctoral positions as new research projects get under way. Check the NISS website at www.nis.org to find out about new positions. ■



George Luta

Post-doc Fellowships, Programs, and Opportunities

In an effort to help ASA members interested in finding and funding post-doctoral positions, the American Statistical Association is running a short series about recipients of federal post-doctoral fellowships, program officers, and potential host scientists. For our inaugural piece, we feature Q&As with four members who have received National Science Foundation (NSF) or National Institutes of Health (NIH) post-doctoral fellowships and program officers from NSF and NIH. Watch for subsequent pieces in upcoming issues or on STATtr@k. We also welcome suggestions for this series.

Many federal agencies offer post-doctoral fellowships, including the NSF (<http://1.usa.gov/1cNZaNc>), NIH (<http://1.usa.gov/179zS7C>), intelligence community (www.icpostdoc.org), Department of Defense, and Department of Energy. See also the Internship and Fellowship Opportunities in Science at Science.gov (<http://1.usa.gov/19etfGD>). Note that many NIH institutes or centers offer fellowships but, for space reasons, we are only consulting with a few.

The following organizations are among the private entities that provide post-doctoral fellowship opportunities: American Heart Association (<http://bit.ly/16D5MeA>), American Cancer Society (<http://bit.ly/1cgHE5>), Damon Runyon Cancer Research Foundation (<http://bit.ly/16D5Ta5>), and Jane Coffin Childs Memorial Fund for Medical Research (www.jccfund.org/fellowship-information).

Bruce Palka Program Officer

NSF Mathematical Sciences Postdoctoral Research Fellowships (MSPRF)

What advice do you have for people considering applying for the NSF mathematical science post-doc fellowship? Do you have any advice specific to statisticians?

In addition to having constructively critical (senior) eyes on the application and working with the proposed host scientist, it is important for MSPRF (www.nsf.gov/funding/pgm_summ.jsp?pims_id=5301&org=MPS) applicants to remember that the application will be reviewed by a panel of individuals who have considerable experience in the mentoring of post-docs and graduate students, but who are not necessarily experts in the subject matter of the application. Thus, the project description must strike a careful balance between being overly technical (lest the reviewers not be able to understand the basic thrust and importance of the project) and nontechnical (lest reviewers question the depth of the research). This is a delicate balance to achieve, but clarity for a nonexpert reader regarding the overarching framework, goals, potential impact, and methodology of the project is, in most cases, crucial to the success of an application.

Applicants should request letters of recommendation from people who can comment meaningfully on the applicant's dissertation or early post-doctoral

research and are not merely chosen because the letter writers are especially distinguished individuals in the profession. A throw-away, thoughtless letter from a famous mathematical scientist who barely knows the applicant can doom an application.

I have no advice for statisticians that wouldn't apply to all MSPRF applicants.

Should a potential applicant discuss their proposal with you the program officer? If so, at what stage of the process?

We get requests for information from MSPRF applicants at virtually all stages of the application process. The members of the MSPRF management team are always ready to respond to such requests, whether made via email or in a phone call. We are able to answer general questions about the MSPRF program, but, for obvious reasons, we are enjoined from offering advice about the scientific content of applications. The answers to many of the questions we receive can actually be found in the MSPRF solicitation (NSF 12-496 www.nsf.gov/pubs/2012/nsf12496/nsf12496.htm) and other documents that can be accessed from the program's homepage and should be read carefully before the application process begins.

What are the proposal funding rates for this program? How many are awarded annually?

We generally receive on the order of 200 applications each year and make roughly 40 MSPRF offers, only a handful of which are typically turned down. The actual number of offers depends on the DMS budgetary situation.

Sonia B. Jakowlew

Program Officer

National Cancer Institute, Cancer Training Branch, Center for Cancer Training.

What advice do you have for people considering applying for the post-doctoral fellowships through NCI? Do you have any advice specific to statisticians?

To be competitive for post-doctoral fellowship awards supported by NCI, applicants should have the following qualifications:

- Outstanding academic record and graduate research training to equip the applicant with the knowledge and skills to perform the proposed research training activities
- Peer-reviewed first author and co-authored scientific publications from the applicant's graduate and post-doctoral research
- Primary sponsor/mentor with appropriate cancer biology expertise in the areas of the applicant's project, a track record of successful mentorship of post-doctoral fellows to independent academic faculty positions, and active R01 or R01 equivalent funding to span the time period of the fellowship who will supervise the training and research project. In the rare cases where the primary sponsor has not established a mentoring track record, a co-sponsor with such a track record and scientific expertise should be included. Both the sponsor and co-sponsor should include letters of support in the application.
- Customized research training plan of high scientific quality that includes a description of the research strategy suited to the applicant's stage of research development, that is distinct from the sponsor's research, and that the applicant can take when he/she leaves the sponsor's laboratory. There must be a description of the background that led to the proposal, the significance of the research, the approach for achieving the hypothesis-driven specific aims, the rationale, and the expected outcomes and proposed alternatives of the proposed studies in the application. Although preliminary data are not required, it is important to include some pertinent data from the scientific literature, current laboratory, or the applicant's research to determine feasibility of the proposed project.
- Additional training activities that will help the applicant become an independent investigator, including coursework, seminars, grant-writing and presentation career skills, and opportunities for interaction with other scientists and investigators

The National Institute of General Medical Sciences (NIGMS) suggested the following steps:

Visit and carefully read the NIGMS F32 Fellowship page (<http://1.usa.gov/1biwsCm>) and the NIGMS Featured Funding Programs (<http://1.usa.gov/18hvnsS>).

See the F32 fellowship-related program areas (<http://1.usa.gov/11SamUw>) and contact the listed individuals if your area of interest falls within a support area. For areas not listed, send an email to Michael Sesma at mstesma@nigms.nih.gov expressing interest in the F32, the specific interest for post-doctoral research, research and training aims for the fellowship, potential sponsor/host, and a biosketch.

As far as support for statisticians and biostatisticians, the focus is on the significance and importance of questions being addressed and how to bring tools such as statistical and computational approaches to explore or address the topic. Fellowship programs provide training that focuses on scientific questions and the experimental approach to be used. The best way to find out about who is using statistical and biostatistical approaches in their research and might be good mentors is to search on relevant terms. Use RePort.nih.gov to find those projects.

- High-quality institutional environment with the necessary research facilities, resources, and commitment for the applicant to perform the research training plan and to foster the applicant's training as an independent researcher. To maximize the acquisition of new skills and knowledge, the sponsoring institution must be a site other than where the applicant has trained as a graduate student. If the applicant proposes to remain at the graduate institution, the opportunities for new research training experiences designed to broaden the applicant's scientific background should be documented.
- Exceptional letters of reference (3–5) from investigators who are familiar with the applicant's background, abilities, and capability to become an independent academic faculty investigator (e.g., previous mentors and collaborators). Letters should be submitted directly into the NIH eRA Commons system by the referees by the due date of the application. The sponsor and any co-sponsors may not submit a letter of reference.
- Applicants with a background in statistics who lack cancer biology training are encouraged to obtain some cancer biology/biomedicine didactic training before submitting an application and to include additional cancer biology/biomedicine training in their applications.

Should a potential applicant discuss their proposal with you, the program officer? If so, at what stage of the process?

Statistician applicants should feel free to contact the program officer with specific questions after reading the current fellowship program announcement and discussion with their primary sponsor.

What are the average proposal funding rates for this program? How many are awarded annually?

During the past five fiscal years of 2008–2012, NCI received an average of 262 unique post-doctoral fellowship applications per year. The average success rate of post-doctoral fellowship applications at NCI was 25% per year during this time period.

Any other advice or comments you'd like to add?

In addition to post-doctoral fellowships, statistician applicants who have little or no experience in biology or biomedicine may also investigate the Mentored Quantitative Research Development Award (K25) currently supported through the program announcement PA-11-196. Statistician applicants who already have experience in biology or biomedicine, and who are working in the areas of cancer prevention, control, behavioral sciences, and population sciences, also may investigate the Cancer Prevention, Control, Behavioral Sciences, and Population Sciences Career Development Award (K07) currently supported through the program announcement PAR-12-067. The program announcements and details about these NCI-sponsored programs can be found at www.cancer.gov/researchandfunding/cancertraining/outsidencil/awardtype.



Devin Koestler

Koestler is an assistant professor in the department of biostatistics at the University of Kansas School of Medicine. He earned his PhD in biostatistics from Brown University, under the mentorship of Andy Houseman, and completed his post-doctoral research training in the quantitative biosciences program at the Geisel School of Medicine at Dartmouth College.

Fellowship Support: NIH R25 training grant (Koestler also received a F31 fellowship through

NIA to support the last 1.5 years of his predoctoral training.)

Where: Geisel School of Medicine at Dartmouth College

When: 2011–2013

What: Cross-disciplinary program in biostatistics, bioinformatics, and molecular epidemiology

With whom: Margaret R. Karagas and Jason H. Moore

Why did you pursue a post-doc?

My ultimate goal is to pursue a career in academics as an independent investigator. That being said, I decided to do a two-year post-doc to further develop my research expertise and expand my horizons beyond biostatistics by learning more about bioinformatics and molecular epidemiology.

Please describe your approach to preparing and writing your application (including any interactions with your host scientist).

Each cover letter was carefully tailored to the specific job posting. Moreover, I made an effort to contact each of the PIs to personally introduce myself and provide any other background about my research interests and qualifications that were not discussed in the cover letter. I also had several colleagues review my application materials before I sent them out. Having an extra pair of eyes look over my application was helpful for ensuring that what was being sent out was of the highest quality.

What advice do you have for people thinking about applying for a post-doctoral fellowship?

Aside from talking to program officers and previous F31 recipients and reviewing abstracts of successful F31 applications for that institute, I think my biggest piece of advice would be to make sure you prepare a well-developed and specific training plan (as I understand, this piece weighs heavily into the overall scoring of these awards). I think those applying for the F-series tend to focus too much on the research plan, with the training plan as an afterthought. Since the F-series grants are training awards, intended on aiding the development of doctoral/post-doctoral students, the training component is key and shouldn't be overshadowed by the research plan.

Why or when should someone consider a post-doc?

The paradigm is changing, but I think if your ultimate goal is a career in academics, then a short-term post-doc can be a valuable tool for achieving your

goals. I personally did not feel prepared to begin a faculty position right after grad school, so I decided to do a post-doc to further develop my research skills and learn more about several different disciplines that were of interest to me.

Anything else you'd like to add?

Start the search and application materials early! With a clear set of career goals in mind, continuously check websites that announce post-doctoral research positions matching your career goals and interests. Introduce yourself to faculty at conferences and departmental seminars, as they are often a valuable resource for helping you find the post-docs that are a good fit based on your training and research interests.

The real key to looking for and ultimately deciding on a particular post-doctoral position is finding the positions that will provide you with the necessary resources to be successful. The top priority should be positions that will enable you to be productive (manuscript publications, conference presentations, etc.), as these are typically the criteria you will later be evaluated on when you decide to take the next step in your career.



Katherine Pollard

Pollard earned her PhD from the University of California at Berkeley Division of Biostatistics under the supervision of Mark van der Laan. Her research at Berkeley included developing computationally intensive statistical methods for analysis of microarray data with applications in cancer biology. After graduating, she did her post-doc at Berkeley with Sandrine Dudoit and developed bioconductor open source software packages for clustering and multiple hypothesis testing before starting a postdoctoral fellowship in bioinformatics at the University of California, Santa Cruz.

Fellowship Support: NIGMS F32

Where: Center for Biomolecular Engineering at the University of California at Santa Cruz

When: 2003–2005

What: Comparative genomics, bioinformatics

With whom: David Haussler and Todd Lowe

In today's job market, post-doctoral experience and a funding record are big pluses, in both academia and other sectors.

Why did you pursue a post-doc?

I wanted to learn more computing and biology. I had the opportunity to work directly with wetlab scientists and professional programmers.

Please describe your approach to preparing and writing your application (including any interactions with your host scientist).

I actually wrote my NIH NRSA fellowship application with a different mentor, Bruce Conklin at Gladstone Institutes. Bruce and the administrative staff at Gladstone taught me a lot about preparing a successful grant. After I received the fellowship and got an offer to be a post-doc at UCSC, Bruce was generous enough to advise me to transfer the fellowship there, because he thought it was a great career opportunity for me. I now work in the same department with Bruce and have grants with him.

What advice do you have for people thinking about applying for a post-doctoral fellowship?

It is a great idea to talk to the program officers at the funding agencies. A big part of getting a fellowship funded is finding the right home for it in terms of review panel and agency. Sometimes, statistical projects are appreciated in unexpected places.

Why or when should someone consider a post-doc?

In today's job market, post-doctoral experience and a funding record are big pluses, in both academia and other sectors. A post-doctoral fellowship enables one to get further training and mentoring, or to explore a new area that could lead to an exciting job.

Post-docs from my lab now have jobs at top universities and biotech companies.



Sherri Rose

Sherri Rose is an assistant professor of biostatistics in the department of health care policy at Harvard Medical School. She earned her PhD in biostatistics from the University of California at Berkeley and was an NSF post-doctoral fellow at The Johns Hopkins University.

Fellowship Support: NSF Mathematical Sciences Postdoctoral Research Fellowship (MSPRF)

Where: Department of Biostatistics at Johns Hopkins Bloomberg School of Public Health

When: 2011–2013

What: Semiparametric estimation for causal inference in longitudinal observational data and machine learning for prediction and effect estimation

Why did you pursue a post-doc?

Post-docs have become increasingly popular for statisticians over the past 10 years, and I saw one as a great opportunity to expand my research platform before starting a faculty position. My doctoral advisor at Berkeley, Mark van der Laan, also counseled me that many of the department's most successful recent trainees (in academic jobs) completed post-docs or other additional training. Independently, I decided that if I was going to pursue a post-doc, I wanted to bring in my own funding. This would allow me to not only have greater control over my research projects, but also gain valuable experience obtaining external grants.

Please describe your approach to preparing and writing your application (including any interactions with your host scientist).

I spent a substantial amount of time pondering the “big picture” of my post-doc—what, where, and with whom—before writing a word. I discovered the NSF MSPRF, but knew they funded few statistics post-docs. Therefore, I went through the awardees for the previous three years and contacted

those working on statistical projects to ask for their advice. Almost everyone I contacted responded. I also wrote to the program officer to query whether my potential area fell within the scope of their program. Several mentors gave me great advice regarding hosts, and I ultimately contacted Michael Rosenblum at Hopkins to discuss possible project ideas. I took these ideas and developed a research plan for my NSF application, after spending many hours reading journal articles in this new area.

What advice do you have for people thinking about applying for a post-doctoral fellowship?

1) Do your research and plan ahead! Whether it is through NSF, NIH, or another organization, it is important to know what their funding priorities are, the deadlines, and how your proposal will be scored. Consider talking to successful awardees from previous years. 2) Make sure your application is compelling to someone outside your subfield and major area. 3) Maximize your effort. The NSF MSPRF usually has a deadline in October, but NIH has multiple deadlines. A back-up plan might include revising an unsuccessful NSF MSPRF proposal for NIH or vice versa.

Why or when should someone consider a post-doc?

Aside from the reasons I note above, a post-doc also allows you to better understand academic life through joining a new department and school. (Most post-doctoral fellowships discourage applicants from submitting proposals to stay at their doctoral institution.) The professional development opportunities helped me zero in on what I wanted out of an academic career, what types of departments I would enjoy, and how I could best contribute to science.

Anything else you'd like to add?

Don't be afraid to take some risks during a post-doc. I was exposed to new research areas and methods at Hopkins, and it inspired collaborations and projects that wouldn't have happened if I'd only interacted with people in my subfield.



Susan Tolwinski-Ward

Susan Tolwinski-Ward earned her doctorate in applied mathematics from The University of Arizona in 2012. She is an NSF mathematical sciences post-doctoral research fellow at the Institute for Mathematics Applied to Geosciences (IMAGE) at the National Center for Atmospheric Research. Her research is in probabilistic estimation of paleoclimates from natural proxy data such as the relative annual ring-widths of trees.

Fellowship Support: NSF Mathematical Sciences Postdoctoral Fellowship

Where: Institute for Mathematics Applied to Geosciences (IMAGE) at the National Center for Atmospheric Research

What: probabilistic paleoclimate estimation

With whom: Doug Nychka

Why did you pursue a post-doc?

I envisioned the post-doc as extra time to build my network of collaborators, add to my publication record, and grow my statistical modeling skills, as well as a vehicle to gain exposure to cutting-edge statistical approaches and scientific problems of interest.

Please describe your approach to preparing and writing your application (including any interactions with your host scientist).

The deadline for the mathematical sciences post-doctoral research fellowships is early (October), and so it was the first proposal I wrote. To get over my jitters about writing my first proposal, I decided to mentally treat the NSF proposal as a draft version that would help me write all the others that followed. I learned a lot about grant-writing from the process, and I guess it turned out pretty well to boot! I think there were two keys to my success: I placed a lot of emphasis in the proposal about why the problem I wanted to work on was important, not just mathematically, but in terms of broader potential benefits to society, and I emphasized how

my dissertation research prepared me to undertake my proposed research plan. My proposed host scientist was not involved in helping me craft the proposal, but he did have to write a letter of support indicating he would have the resources and commit the time to be my mentor. I had worked in IMAGE as a summer visitor before, so Doug already knew me, and for him to write that letter was as easy as sending an email.

What advice do you have for people thinking about applying for a post-doctoral fellowship?

Start brainstorming project ideas and writing your proposal as early as possible. And if the criteria used to evaluate proposals are provided (as they are in the NSF fellowship announcements), then write your proposal such that a reviewer holding a checklist of those criteria and just scanning what you've written will easily and clearly see that you meet all those criteria.

Why or when should someone consider a post-doc?

If you feel you need more time to mature as a researcher or establish your research program and network of collaborators before applying for faculty positions, a post-doc is a great professional opportunity. ■

Cleveland Chapter Hosts Workshop and Symposium

In celebration of the International Year of Statistics, the Cleveland Chapter of the ASA and department of statistics at the University of Akron are sponsoring a workshop and symposium in October.

The hands-on workshop, "Introduction to Statistical Computing with R and Bioconductor," will take place October 4 from 8 a.m. to 6 p.m. at the University of Akron campus. This workshop is a unique opportunity to learn the basics of both R and Bioconductor from members of the Bioconductor Core Development Group at the Fred Hutchinson Cancer Research Center (Seattle). The number of participants for this workshop is capped at 35 (first come, first served).

Following the workshop is a full-day symposium, called "Statistics at the Crossroads: Its Multifaceted Impact on the Society." The symposium, which will be from 8 a.m. to 6 p.m. October 5, seeks to provide a compact overview of statistics' all-pervasive and multifaceted impact on society. The symposium will include eminent invited speakers, as well as contributed poster and oral presentations.

For registration and hotel information, visit the chapter's website at www.bio.ri.ccf.org/ASA/cfall.html.

Collaborating with International Colleagues, or Should It Be Inter ... Colleagues?

Geert Molenberghs, Universities of Hasselt and Leuven, Belgium

I am not an expert on international interaction from a sociologic, anthropologic, or psychological point of view. That said, I have been privileged to work in an environment with a variety of faculty, staff, and students. It means I learned through a good amount of practice and a bit of theory.

The universities of Hasselt and Leuven in Belgium offer international master programs in statistics. The student population, enhanced by government grants, finds its origin in all continents. A number of students tend to go on to PhD training in our research institute. Some eventually become academic researchers and faculty.

Not unrelated to this, many of us have been having intense research- and education-oriented collaborations with the rest of Europe and the rest of the world. Especially collaboration with other European countries is geographically and historically natural for us.

Belgium is tiny, with about 11 million inhabitants and with 200 miles being the longest distance one can travel as the crow flies. From Hasselt, the trip to Maastricht in the Netherlands is a mere 20 miles. The distance to the French-speaking city of Liège is 25 miles, while Aachen in Germany a 30-mile trip. If that is not enough, high-speed rail connects us to Paris in France and London in the United Kingdom in just a couple of hours. The equivalent to domestic travel across the United States and Canada brings us all over Europe, while the Americas and large parts of Africa and Asia can be reached with reasonable travel efforts.

The ease of international contact does not mean it is always easy or evident, even though the international nature of our profession makes it multicultural. As a consequence, it is helpful to develop a certain amount of intercultural knowledge, intuition, and practice. A necessarily incomplete set of examples might clarify this.

Cultural differences have been described and quantified as “cultural distances.” Geert Hofstede, a Dutch anthropologist, has done considerable work to this effect. When I travel to Japan, I expect a larger culture shock than when I travel to the Netherlands. I have been to Japan four times, but how many times I have been to the Netherlands? I can hardly guess. Proximity is not the same as familiarity, however. Visiting a place, near or far, as a tourist is different than visiting it as a professional collaborator. When I bring an unplanned memo to a planned meeting in Belgium, this may be considered a pleasant surprise. But, in the Netherlands, one might suspect a hidden agenda that is going to be railroaded through. Let us call it the fallacy of seemingly close cultures.

One is often deceived by linguistic and geographical proximity. Hofstede said, “Flanders, the Dutch speaking part of Belgium, is separated from the Netherlands by a common language, with the Dutch and French speaking parts of Belgium are united by a different language.”

Language can appear to be a hard divide. As a covariable, it is an easy one, but not the only one. Cultural differences are multifaceted and cannot be reduced

to language. Belgium and the Netherlands have different religious and political heritage, going back centuries.

Interestingly, if we transplant this example to the United States, English-speaking Canada, and Québec, a good number of conclusions carry over. The aforementioned does not mean language should be downplayed. In many languages, it is common to be euphemistic; others are more forthright. In Europe, the Germanic, Roman, and Slavic languages are different in this respect, with a special place for English because of the language’s multiple-root history on the one hand and its lingua franca status on the other. The statements “I am not quite sure I agree” and “You may want to take a preparatory module” are clear from a figurative standpoint, which goes well beyond the literal. The subtle differences in English usage/use between the various English-speaking countries in the world—some contiguous, some far away, even in spelling—is a paradigm for a broader system of cultural differences, some obvious and some hidden, but far reaching, like the root system of a tree.

I mentioned history. After a while, let’s say, 2,000–3,000 years, cultural heritage tends to become ingrained in people’s systems to the point we don’t notice it, except when we meet and closely interact with people from a different culture.

What’s the best way to deal with it? Intercultural science has become an extensive and multidisciplinary field, so studying it at a deep level may be discouraging,



Geert Molenberghs is professor of biostatistics at Universiteit Hasselt and Katholieke Universiteit Leuven in Belgium. He has co-authored several books on surrogate markers in clinical trials and on categorical, longitudinal, and incomplete data. Molenberghs is founding director of the Center for Statistics. He is also the director of the Interuniversity Institute for Biostatistics and Statistical Bioinformatics (I-BioStat).

unless we plan a career move. At the risk of simplification, it fortunately isn't too difficult to get a good feel for the basics, helped by academic curiosity and ... by being statisticians. We tend to understand the concept of signal-noise, trend-variability rather well. There are many variables that explain cultural differences between people, which go well beyond the obvious ones like nationality and language. There is gender, age of a person, age (time frame) of the culture, professional area (academe, industry, government), political system in the home country, individual-oriented or family-oriented culture, being a serial or multi-tasker, being a mathematician, etc.

Take the type of culture as an example. It has been observed that cultures that place the individual at a higher position than the group (e.g., family, tribe, town) might be slightly more open to scientific careers, in search of the unknown, in search of improvement of the known. The family culture may be beneficial toward collaboration, thus beneficially mixing various skills. So, which of the two is better? The trick is not to think in terms of better-worse, but rather in terms of difference and variety, together with the advantages this brings. It sounds like anthropological genetics!

Take plagiarism for example. People with a western heritage may detect an instance of plagiarism in writings by a student or colleague from a distinct heritage, so blatant that it is hard to imagine the rationale for such a clumsy fraud attempt. The trick is not to think in terms of fraud, but rather to try to understand it from a cultural perspective. In several cultures, citing 'the words of the master' is a sign of deep respect; not citing the master's name thus increases the status further by assuming it is obvious who the words are from.

Should we accept this? In many cases, the answer might be "no," which is not a problem as long as the system we operate under is described in clear, factual terms, without claiming superiority; this does not preclude stating the time-honored advantages of our conventions, but still with respect for the other system. To quote an analogy, "Which is the better bibliographic system, Harvard or Vancouver?" Rather, it is more constructive to think about relative merits and disadvantages.

Take running a meeting or a session, for example. Like train punctuality, meeting time punctuality is a not so slowly varying function of the globe's cultures. To know what to expect, take a look at how trains and buses are run locally and consider it a marker for meeting culture. One might expect punctual meetings and presentations in Japan, Switzerland, and Sweden.

But isn't it better to make sure meetings run on time? Again, we prefer switching to the advantages-disadvantages paradigm. Running the meeting on time allows for easy, convenient planning, but also for easy upsetting of the apple cart. It works well when it works well, but if something mildly serious goes wrong, the whole schedule might collapse. Under the alternative model, the elasticity may be larger. Also, meetings-on-time may stall discussion.

Sometimes, we learn most from the discussion after a talk. This does not imply judgment, but rather that good old 'British-style' discussion, even controversy, aids understanding. Good examples can be found in the read papers with discussion, from say the middle of the 20th century, published in the RSS journals. Strict adherence to the schedule may postpone and sometimes cancel discussion. Should we try to find a compromise? Sometimes, but not always!

Rather than trying to coerce everything in a bland model, it is good to be aware of various models; there is a place and a time for all of them.

Cultural differences may be found interesting by some, but discouraging and even treacherous by others—discouraging because there seems to be a lot to learn, even at only a superficial level, and treacherous like quicksand because when you notice, it is too late. However, apart from general awareness and a healthy interest in the subject, practice will naturally build up skill. A simple trick is to tell your culture you don't know when you don't know. Making clear that you don't know how a certain thing is said or done conveys the message that you are aware of potential cultural differences and willing to learn.

International or intercultural?
Perhaps simply interesting. ■



How to Find and Prepare for Opportunities to Work in Developing Nations

James J. Cochran, Louisiana Tech University



An IDP camp outside of Mogadishu, Somalia



James J. Cochran earned his bachelor's and master's degrees from Wright State University and his PhD from the University of Cincinnati. He has taught many undergraduate and graduate courses and published more than 20 papers in peer-reviewed journals. In 2008, he was awarded the INFORMS Prize for the Teaching of OR/MS Practice. He is the co-founder of Statistics Without Borders.

Working in a developing nation can be an extremely rewarding element of your professional life, and if your experience is anything like mine, the benefits will be plentiful and spill over into your private life. However, finding a suitable problem to which you can contribute your particular statistical expertise can be challenging.

I have been fortunate, I have been afforded and taken advantage of opportunities to work on every continent except Antarctica—and I have not given up hope on being invited to spend some time at McMurdo Station on Ross Island, Palmer Station on Anvers Island, or Amundsen-Scott at the South Pole! But not too many years ago, my professional experience was limited to the United States and Canada. My first opportunity to work outside North America arose as a result of my participation in a conference held by the European Operational Research Societies (EURO).

The EURO is a consistently strong conference relevant to my research, and the conference was held in Reykjavik, Iceland—a place I had always wanted to see. I scrounged up the funds (paid for most of the trip myself) and attended the conference. While

there, I was able to meet people who I never would have met at a conference in the United States and learn about applications to problems from all over the world (even Antarctica!). I ultimately established collaborative relationships with a few of these individuals—relationships that have evolved into terrific friendships—and began working on projects in developing countries.

So my first suggestion is to attend a conference outside of the United States or Canada. If you have little or no idea where outside of the United States or Canada you would like to work, then you should consider attending an international conference with broad appeal such as the biennial World Statistics Congress of the International Statistical Institute (ISI) or the triennial conference of the International Federation of Operational Research Societies (IFORS). Such conferences will provide you with ample opportunity to meet colleagues from around the world who are working on research projects and applications that may be of interest to you.

If there is some part of the world where you know you would like to work, then you should try to attend a conference held by that country's professional statistics association. You can find information about many of these conferences on the online event calendars maintained by the ASA and ISI. If no event in your target country is listed on either of these calendars, you can search the Internet and/or use the ISI's membership directory (<http://isi.cbs.nl/ISImembers/isimembers.htm>) to find names and contact information of the leaders of the country's professional statistics association. A little determination will pay off, and the individuals you find will likely be happy to hear from you and share information about their organization's activities.

If attending a conference on another continent is infeasible, you can contact colleagues at universities in your target country. Most major universities provide contact information for faculty members (this is, unfortunately, not as common across Africa as it is for other continents), and you can allow Google to translate if language is a barrier. Start slowly; do your homework and learn what you can about the research of the individual you are contacting. Then, share information about your experience, education, and research record/interests and discuss how they overlap with the individual(s) you are contacting. Conclude by expressing an interest in exploring a potential collaboration.



View of Reykjavik from the top of Hallgrímskirkja Church

While these approaches will help you find academic colleagues outside the United States and Canada with whom you may wish to collaborate, many important problems on which you could work are outside the realm of academia. Nonprofit organizations (NPOs) and government agencies are vibrant sources of interesting problems for statisticians who are interested in working in developing nations. The ASA provides several ways you can contribute to problems faced by these groups. Statistics Without Borders (SWB, <http://community.amstat.org/StatisticsWithoutBorders/Home>) is an ASA outreach group dedicated to providing free statistical consulting to organizations and government agencies, particularly from developing nations that do not have the resources for statistical services. If you join SWB, you will receive periodic email detailing opportunities for SWB volunteers to contribute their statistical expertise to a variety of problems and issues around the world.

Another ASA outreach group, Friends of Australasia (FOA, http://community.amstat.org/Friends_of_Australasia/Home), focuses on fostering collaborative efforts between ASA members and colleagues in the South Pacific. For example, since 2011, FOA leaders under the direction of Mark Griffin have worked with Fijian colleagues to organize an annual statistics conference in Suva. FOA is open to all ASA members, and its leaders are always looking for new ways to strengthen the relationship between the ASA and our colleagues in Australasia.

Social networking offers incredible potential for your search for opportunities in developing nations. I have used LinkedIn to identify and establish professional relationships with several key individuals in NPOs. This has led to my participation in efforts



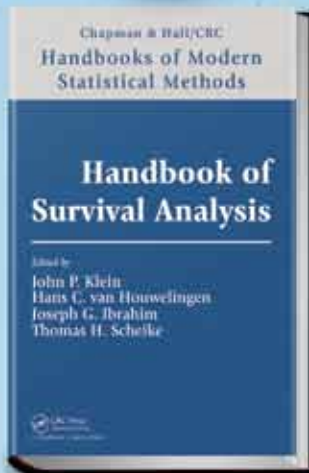
James Cochran gives a plenary talk at the 2007 Conference of the Operational Research Society of South Africa, University of Cape Town.

in extremely remote places such as Mozambique, the Congo, and Somalia. When you see a news report on television, hear a news report on the radio, or read a news report in a newspaper (if you can find a newspaper) or on the Internet, do some digging to learn more and then think about how you could contribute your statistical expertise. Use social media to find someone involved and ask for more information. Once you have learned what you can about the problem or issue of interest, write a few paragraphs explaining how you might be able to contribute to the resolution of the problem or issue and send your brief 'proposal' to your contact. Of course, you should always be aware that well-qualified statisticians already may be working on the project or issue of interest and your assistance may not be needed.

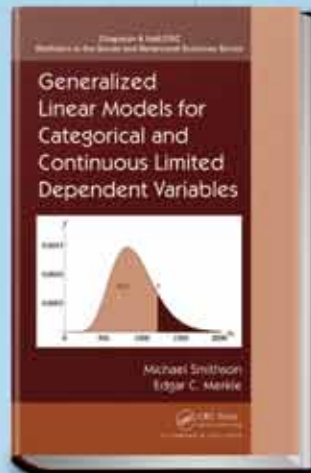
Another way to contribute to a research project in a developing country is to serve on or chair a dissertation committee for a graduate student studying in that country. Many African nations suffer from a shortage of statistics and operations research

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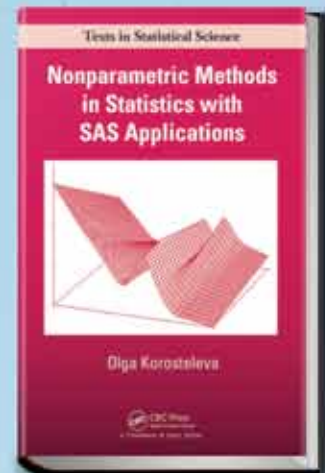
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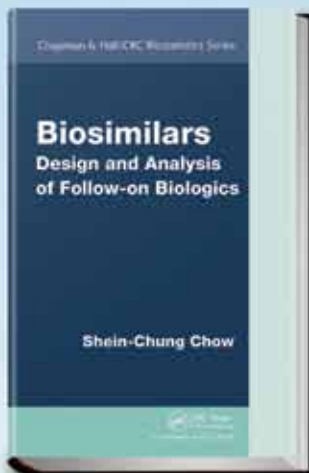
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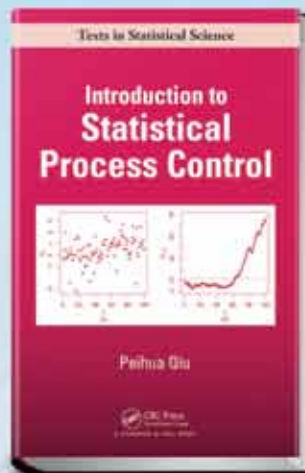
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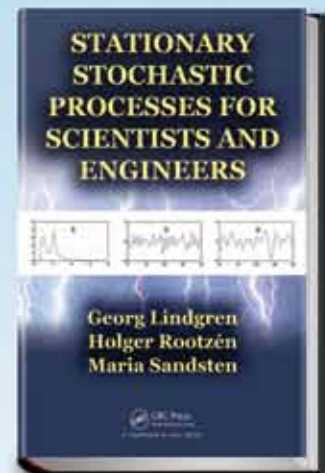
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academics who are qualified to serve on these committees, and by doing so, you can simultaneously help a graduate student complete requirements for her/his degree, build statistical/analytical capacity for that country, and satisfy your desire to work in a developing country. A program for identifying student needs and matching them with volunteer expertise is in the works. Once this program is in place, it will provide a means for you to volunteer to serve on dissertation committees for universities in other nations. (I am currently serving on or chairing dissertation committees for several graduate students at African universities and we work primarily through electronic means.) I suspect students in developing nations who are working on doctorates in other disciplines also are in need of committee members with statistical expertise, so there may be opportunities for those of you who are interested in applications to problems in economics, biology, political science, medicine, sociology, psychology, marketing, finance, and disciplines that routinely use statistics.

Once you have found a suitable problem to which you can contribute, you will likely face another set of challenges. The problems posed in developing nations can be very different—and much more complex—than applications we may routinely see or contribute to. It is important to do the following:

- Learn as much as you can about the problem at hand
- Avoid the temptation to try to resolve the problem or issue before you have a full understanding of the problem
- Be clever and creative in your efforts to apply statistics to the problem
- Bring a wide array of analytic tools to the problem or issue
- Be sensitive to differences you may experience in the following interrelated environments, including the following:

Social—how do people interact with each other?

Political—how do people organize and manage themselves as a group?

Business and Economic—how do people trade and transact with each other?

Legal—how do people avoid and resolve disputes with each other?

Educational—how do people learn from each other?

Cultural and Religious—how do people observe their customs?

Linguistic—how do people communicate with each other?

Also learn everything you can about the nuances of these environments in the country in which you will work, and keep in mind that many aspects of these environments in the United States and Canada may be rather peculiar to the colleagues with whom you are or will be working. These are important considerations in any project, but they are particularly important when working across cultures.

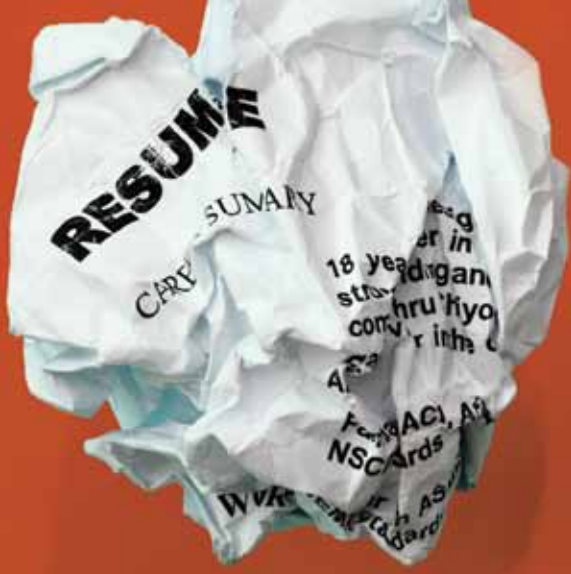
Finally, although a great deal of the collaboration and cooperation involved in working in developing countries can be accomplished remotely, travel to the country to work face-to-face with your colleagues and clients may accelerate progress or otherwise be necessary or advisable. If you have an opportunity to travel to a developing country as part of your research, understand that your colleagues and clients may not be able to cover your expenses, so be prepared to cover your costs personally or find some other means to pay for your travel. Your colleagues and clients will appreciate your efforts, and you will be glad for the opportunity. ■

Winner Announced, Nominations Sought for Zelen Leadership Award

The department of biostatistics at the Harvard School of Public Health named John J. Crowley the recipient of the 2013 Marvin Zelen Leadership Award in Statistical Science. Crowley, group statistician and director of the statistical center for the Southwest Oncology Group and president and CEO of Cancer Research and Biostatistics, delivered a lecture titled “A Brief History of Survival Analysis” on May 24 at Harvard University.

Supported by Marvin Zelen’s colleagues, friends, and family, the Marvin Zelen Leadership Award in Statistical Science was established to honor his role in shaping the biostatistics field. Individuals in government, industry, or academia who have influenced the theory and practice of statistical science by virtue of their outstanding leadership are eligible. While individual accomplishments are considered, the most distinguishing criterion is the nominee’s contribution to the creation of an environment in which statistical science and its applications flourish. The award recipient delivers a public lecture on statistical science at the Harvard School of Public Health and is presented with a citation and honorarium.

Nominations for the 2014 award must be received by December 1 and should be sent to the Marvin Zelen Leadership Award Committee, Department of Biostatistics, Harvard School of Public Health, 655 Huntington Ave., Boston, MA 02115 or via email to vbeaulie@hsph.harvard.edu. Include a letter describing the contributions of the candidate, specifically highlighting the criteria for the award, and a curriculum vitae. Supporting letters and materials would be helpful to the committee.



STATtr@k

How to Write an Effective Cover Letter and Résumé

Dawn Eash, ASA Committee on Career Development

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 are applying.

Even though the unemployment rate is steadily decreasing, it is safe to assume that 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; a CV is more appropriate for senior-level or academic positions.

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

Education

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

Relevant work experience

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

Relevant skills

List all skills, including software knowledge.

If you are a new graduate and do not have much relevant experience, consider including Relevant Coursework and/or Exams Passed sections.

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:

- A short biography describing your areas of interest and expertise
- Published articles
- Articles under review
- Honors and awards
- Invited presentations
- 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 font (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 often can be used to weed out applicants 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 that 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 there. 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 work force. The first few sentences may be all anyone reads of your cover letter, so they 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 static for the most part for the most part, 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 exist, 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 Resume.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! ■

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Our Careers in Statistics: A Most Enjoyable Ride

Jonas and Susan Ellenberg



Jonas and Susan Ellenberg

Susan: Both of us slipped into statistics more accidentally than deliberately.

Jonas: My family business background, steeped in the New York City 7th Avenue textile trade, led me to the Wharton School at the University of Pennsylvania as an undergraduate. I chose statistics as a major, as I had always enjoyed math. Wanting to earn extra money while at Penn, I signed on to the University of Pennsylvania Periodic Health Examination project under the tutelage of Stanley Schor (famous for the “Mystic Statistic,” a regular JAMA piece aimed at teaching clinicians some basic statistics). This experience introduced me to the application of statistics to medicine.

Wharton, in those days (1959–1963), did not have the mathematically sophisticated curriculum it has today and I found myself inadequately prepared for the rigors of the graduate program in mathematical statistics at Harvard, to which I had been accepted. To fill the gaps, I took summer courses prior to my first year and enrolled in the undergraduate advanced calculus course during my first Harvard semester. I remember vividly the Harvard undergrads writing up their homework sets on the back of computer output during class while I spent many long nights on such difficult tasks. Meanwhile, my classmates were surging ahead in math stats. I eventually caught up and was privileged to work with W. G. Cochran as my thesis advisor.

Susan: Growing up, I never thought about any career other than teaching and, by high school, had selected math as my subject. I pursued a Master of Arts in teaching degree following college graduation and happily taught high-school math for three years, first in Cambridge and then in Maryland after Jonas completed his PhD and took a position at the NIH. My plan at that time—have two children, be home for 7–8 years until the youngest was in pre-school, return to teaching—was perturbed by Janet Wittes, a graduate school classmate of Jonas’, who was also in Bethesda working as a research associate for the legendary Jerry Cornfield while her MD husband completed his military commitment as a public health service physician at the NIH. Janet and Jerry needed some programming support, and I agreed to help out for a few months before our first child was due. A few months extended into many years, during which I entered the PhD program in statistics at The George Washington University and moved away from pure programming to more statistical tasks at the GWU Biostatistics Center.

Jonas: My first position out of graduate school was at the neurology institute (NINDS) at the NIH. I worked with medical colleagues on evaluating prenatal, perinatal, and early developmental risk factors for cerebral palsy and convulsive disorders from the NINDS Collaborative Perinatal Project (CPP) database (recruitment 1959–1965). This observational database was extraordinary for its time and even today. Sixty-thousand pregnant women were followed through pregnancy and their offspring followed through eight years of life. This was in the early ’70s and my first encounter with very large data sets and the unique statistical issues they presented. Lugging around 11’x14’ continuous computer printouts is a charm of yesteryear.

One element that highlights the meticulous planning of the CPP was the inclusion of a CPP nurse in the delivery room who was responsible only for capturing the critical data during delivery and birth (no responsibility for patient care). My collaborations with Dr. Karin B. Nelson (pediatric neurologist at NIH and now emerita) forced the rethinking of many established medical paradigms. For example, our work showed that a febrile seizure, a fairly common occurrence in infancy, was only an important risk factor for epilepsy or seizure disorders in a very small and well-defined subset of children. This result effectively discouraged the then-common practice of treating all children with febrile seizures with neuroactive drugs for extended periods. We also showed that cerebral palsy was due largely to prenatal factors and

not problems in labor and delivery (thereby enraging the cadre of lawyers whose incomes sprang from litigation against obstetricians.)

My 'class' at NIH included (among others) David Byar, Dave DeMets, Mitchell Gail, Barry Margolin, Richard Simon, James Ware, and Janet Wittes. This group continued the exciting and critical contributions to statistical science begun by the early giants of NIH biostatistics: Jerry Cornfield, Harold Dorn, Sam Greenhouse, Max Halperin, Nathan Mantel, and Marvin Schneiderman.

Susan: Jerry Cornfield died in 1979 of pancreatic cancer; during his illness, efforts to obtain new projects slowed and I found myself in need of a new position. I joined the then-fledgling (now thriving) EMMES Corporation in 1979 to take responsibility for some National Cancer Institute (NCI)-funded cancer studies. I loved this work and, after three years, had the opportunity to learn more about the methodology of cancer research when I took a position with Richard Simon at the NCI. That was the beginning of an exciting and rewarding 11 years at NIH, six at NCI, and five at NIAID, where I became the first biostatistics branch chief in the division of AIDS at the very beginning of AIDS drug development and at the height of the AIDS activism movement. It was an extraordinary time (well depicted in the 2012 Oscar-nominated documentary, "How to Survive a Plague"), when statisticians reached out to the activist community and initiated a highly productive period of mutual education about trial design and community needs that led to better accepted studies and advances in AIDS therapeutics.

Jonas: After 26 years at NIH, I moved to Westat as vice president and head of biostatistics. Westat is an employee-owned research organization providing services primarily to federal government agencies, including NIH. There, I was provided a crash course in grant writing and jumped into HIV/AIDS research and issues of reliability of patient reporting. Although Westat is a profit-making employee-owned organization, its spirit of collaboration, intellectual curiosity, innovation, and integrity made it feel much more like an academic center than a business.

Susan: In 1993, I had a new opportunity—to head the Office of Biostatistics and Epidemiology at the U.S. Food and Drug Administration's (FDA's) Center for Biologics Evaluation and Research. I had had many interactions with FDA through my work on AIDS drugs and decided to accept this offer. I knew FDA would be a very different environment, and it was, but there was no shortage of interesting and important problems to address—appropriate trial designs, use of placebos, vaccine safety, operation of data monitoring committees—all highly motivating. I stayed at FDA for 12 years, far longer than I would have guessed when I started.



Our work in statistics has been enormously satisfying, as we have both been involved in addressing important public health issues.

At the end of 2004, I began yet another new career, as an academic. In this role, I've had the opportunity to learn many new things and to bring my federal experience to bear on research programs at Penn. I'm pretty sure this will have been my last career change!

Jonas: Although I had been quite happy at Westat, Penn provided Susan and me with exciting new opportunities. We both took on administrative positions in addition to research. My funding continued to be primarily from NIH, albeit with new disease areas (prematurity and cardiovascular disease) raising difficult but exciting design issues in multicenter activities. I was hesitant about my ability to teach students, having received a "Stay away from Ellenberg" review in the Harvard Crimson Confidential Guide as a Teaching Assistant some five decades ago. I did not feel that my experience in lecturing outside of the classroom would give me the background for working with students effectively. I was wrong; the teaching experience has been the greatest joy of my years at Penn.

Both: Our work in statistics has been enormously satisfying, as we have both been involved in addressing important public health issues. In addition, throughout our careers, we have both enjoyed, and have been grateful for, the opportunities to serve our professional communities: Jonas as treasurer, then president, of the International Biometric Society and then president of the ASA; Susan as president of ENAR and the Society for Clinical Trials, chair of AAAS Section U, and (currently) chair of the NISS Board of Trustees. We feel fortunate to have chosen careers in statistics! ■

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

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

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

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

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

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

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

California

■ The Stanford Graduate School of Education seeks to fill a tenure-track, open-rank faculty position in Educational Measurement and Assessment. Seeking a scholar with expertise and a research agenda in educational measurement and assessment to teach graduate-level courses in psychometrics and measurement and courses related to assessment development, use, or policy. Research agenda should relate to measurement and assessment, teaching, learning, and/or education policy issues. <https://academicjobsonline.org/ajol/jobs/2694>. EOE.

■ Non tenure line-Research-Quantitative Sciences Unit-Division of General-Medical Disciplines/Department of Medicine-Stanford University. The Quantitative Sciences Unit (QSU) in the Department of Medicine at Stanford University seeks applicants for a non tenure line - Research (NTL-R) assistant

professor position. We will consider candidates who have a PhD in biostatistics, statistics, or a related field. Please go to <http://medicine.stanford.edu/faculty/facultyads/QSU-ntl.pdf> to see full description. Stanford University is an AA/EOE.

■ RAND Corporation is seeking PhD statisticians for exciting opportunities to collaborate on multidisciplinary public policy research projects. Openings exist for recent graduates and experienced statisticians. See our ad in the September *Amstat News* for details or go to www.rand.org/statistics. Applications received by December 15, 2013, will receive priority. Applications must be submitted online following the instructions at www.rand.org/statistics/jobs.html (search PhD Statistician). Send questions to Susan_Paddock@rand.org. EO/AA employer.

Iowa

■ The Department of Biostatistics (cph.uiowa.edu/biostat/) in The University of Iowa College of Public Health invites applications for tenure-track assistant professor positions. Candidates with expertise in the area of statistical genomics, clinical trials, Bayesian methods, or a combination of these areas are of particular interest. See <http://jobs.uiowa.edu> (requisition #62969) for complete application information. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

■ Drake University Actuarial Science Program invites applications for full-time 9 month tenure-track assistant or associate professor of actuarial science starting August 2014. PhD preferred, ABD considered. View details and required application materials at <https://drake.HireTouch.com>. Reviews begin Oct 1, 2013. Drake is an equal opportunity employer, and actively seeks applicants who reflect the diversity of the nation. No applicant shall be discriminated against on the basis of race, color, national origin, creed, religion, age, disability, sex, gender identity, sexual orientation or veteran status.

Maryland

■ Seeking PhD/experienced master's statisticians for center for devices and radiological health, FDA, HHS in Silver Spring, MD. Grapple with rich array of statistical issues in clinical trials for new technologies, from LASIK and artificial hearts to genetic tests and robotic surgery. Review statistical design/analysis issues in medical devices from invention to postmarket. Email CV to Greg Campbell, greg.campbell@fda.hhs.gov. Identify residency/visa status in application. www.fda.gov/cdrh/index.html FDA is a smoke-free environment and an equal opportunity employer.



DIRECTOR, DIVISION OF BIOSTATISTICS

NYU School of Medicine seeks to recruit a **Director** of the **Division of Biostatistics**. This is a unique opportunity for an accomplished biostatistician to shape and expand biostatistics in a dynamic academic environment characterized by growth, collaborative spirit, and high impact science.

The Division of Biostatistics currently has 9 faculty members and 7 staff biostatisticians, and contributes to scientific advances that benefit human health through innovation in methodology, theory, and application of biostatistical methods in biomedical research. The Division is a vital hub of collaboration and consultation to the entire NYU School of Medicine community, and supports major research initiatives in cancer, environmental medicine, cardiovascular and pulmonary disease, and mental health, among other areas. The division leads the biostatistics cores of the NIH CTSA-supported NYU-HHC Clinical and Translational Science Institute, the NIH Cancer Center Award-supported NYU Cancer Institute, and a developing unit that houses the Statistical and Data Coordinating Center as well as the Clinical Coordinating Centers for multicenter clinical trials and registries. The division supports education and training at multiple levels including a PhD program in Biostatistics. The Department of Population Health (<http://pophealth.med.nyu.edu/>), founded in 2012, is academic home to the Division, and committed to supporting its robust trajectory of growth through methodological and collaborative research.

We seek a Division Director nationally recognized for his/her scholarship and with a successful record of administrative leadership in academic medicine or public health. The Director will lead Division faculty in strategic planning for growth, including identification and pursuit of funding initiatives in translational and methodological research. Responsibilities will include developing and administering biostatistical support infrastructure that enables and accelerates the institutional research mission, representing the Division effectively within the Department and the School of Medicine, and providing leadership, including administration and growth of Division resources, recruitment and mentoring of new faculty, and academic promotion and retention of Division faculty. The Director will also interface at the University level, including with the Global Institute of Public Health, Center for the Promotion of Research Involving Innovative Statistical Methodology (PRIISM), and Courant Institute of Mathematical Sciences.

Core qualifications include: excellent track record in research, strong interpersonal and administrative skills, and significant academic experience and accomplishment including in a leadership role. Candidates must have a doctoral degree in Biostatistics or Statistics and be eligible for a tenured appointment at the rank of associate or full professor. Send cover letter and CV (addressed to Marc N. Gourevitch, MD, MPH), referencing "search biostats" to kathryn.nyland@nyumc.org

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Minnesota

■ Tenure-track appointment starting fall 2014. Primary duties are to teach undergraduate statistics courses using an innovative and modern curriculum. Duties may include the teaching of master's or doctorate level service courses. Secondary duties include collaboratively supporting the Statistical Consulting Center. Minimum requirement is a PhD in statistics or biostatistics completed by 8/2014. For additional information go to <http://agency.governmentjobs.com/winona/default.cfm>. Review begins 10/25/13. Winona State University is an AA/EOE.

Missouri

■ University of Missouri, Department of Statistics is seeking at least one tenure-track assistant professor in statistics fall 2014. A PhD in statistics, biostatistics or related field by August 15, 2014 is required. Apply online at <http://hrs.missouri.edu/find-a-job/academic> with a cover letter, CV and transcripts required.



NORC at the University of Chicago is an independent research organization headquartered in downtown Chicago with additional offices on the University of Chicago's campus, in the D.C. Metro area, Atlanta, and Boston. With clients throughout the world, NORC collaborates with government agencies, foundations, educational institutions, nonprofit organizations, and businesses to provide data and analysis that support informed decision making in key areas including health, education, economics, crime, justice, energy, security, and the environment. Learn more about NORC's leadership and experience in data collection, analysis, and dissemination at:

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Survey Sampling Statistician

EOE

Westat is an employee-owned corporation headquartered in the suburbs of Washington, DC (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 has become one of the leading survey research and statistical consulting organizations in the United States.

Our company was founded in 1961 by three statisticians. The current staff of more than 2,000 includes over 60 statisticians, as well as research, technical, and administrative staff. In addition, our professional staff is supported by data collection and processing personnel situated locally and in field sites around the country. The work atmosphere is open, progressive, and highly conducive to professional growth.

Our statistical efforts continue to expand in areas such as the environment, energy, health, education, and human resources. Westat statisticians are actively involved in teaching graduate-level courses in statistical methods and survey methodology in collaborative arrangements with area colleges and universities.

We are currently recruiting for the following statistical position:

Survey Sampling Statistician

Responsibilities include: developing sample designs (determining stratification and allocation to strata; determine sample size based on differences and power; determine optimal clustering; and select sample); selecting and/or constructing appropriate sample frame; developing and documenting weighting plan which includes non-response adjustment and bench-marking; developing and conducting imputation for item nonresponse and estimating sampling errors using appropriate software; writing specifications for programmers; and preparing reports on sample design, weighting procedures and other methodological issues. Candidates would benefit from knowing SAS and other statistical software packages; although candidates are not required to do programming. A master's or doctoral degree in statistics is required with 3 or more years of relevant experience. Coursework in sample survey design is highly desirable.

Westat offers excellent growth opportunities and an outstanding benefits package including life and health insurance, an Employee Stock Ownership Plan (ESOP), a 401(k) plan, flexible spending accounts, professional development, and tuition assistance. To apply, go to www.westat.com/careers.



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Statistician Positions at the RAND Corporation

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND focuses on the issues that matter most, such as health, education, national security, international affairs, the environment, and more. As a nonpartisan organization, RAND is widely respected for operating independent of political and commercial pressures. Through our dedication to high-quality and objective research and analysis and with sophisticated analytical tools developed over many years, RAND creates knowledge, insight, information, options, and solutions that will be both effective and enduring.

Statisticians at RAND have many exciting opportunities to contribute to policy research by collaborating on multidisciplinary teams; developing statistical methods that advance policy research; and leading research projects. There are also opportunities to teach in the Pardee RAND Graduate School. Our group of twelve Ph.D. statisticians and seven Masters-level statisticians provides a collegial and stimulating environment.

Candidates should have strong theoretical training, a genuine interest in applied statistics, and excellent oral and written communication skills. We seek both recent graduates and experienced statisticians with substantial publication records and extensive applied experience. Location options include Santa Monica, CA (RAND's headquarters), Pittsburgh, PA and Washington, DC. Applicants should apply online at www.rand.org/jobs (search for the "PhD Statistician" position). Please submit a cover letter, CV, statement of research interests and consulting experience, and writing sample. Graduate transcripts (if degree received after 2010) and three letters of recommendation should be sent to Susan_Paddock@rand.org or to: RAND Corporation, Attn: Susan M. Paddock, Head of the Statistics Group, 1776 Main Street, Box 2138, Santa Monica, CA 90407-2138 USA. Applications will be considered on a continuing basis, but preference will be given to those who apply by December 15, 2013.



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Ohio

■ The Department of Quantitative Health Sciences at the Cleveland Clinic is recruiting for faculty and master's-level positions. Many areas are being sought, including biostatistics, health economics, health status measures, analysis of population-based registries, diagnostic test assessment, ROC analysis, and psychometrics. Details for all positions, as well as application instructions, are on our website: www.lerner.ccf.org/qhs/jobs. EOE.

Pennsylvania

■ University of Pittsburgh assistant/associate professor. Duties: develop and teach courses in design of clinical studies and statistics; mentor students and consult with faculty; maintain active research program; obtain funding. Must have: doctorate degree in statistics, biostatistics or related discipline; teaching experience; experience in collaborating with clinical and/or translational scientists; success record in grant writing and peer-reviewed publication; potential for external funding. Details available at www.pittsource.com/postings/71848. The University of Pittsburgh is an affirmative action, equal opportunity employer.

■ Possible tenure-track and visiting positions. Collegial environment emphasizing disciplinary and cross-disciplinary research and teaching. All areas of statistics welcome. Joint appointments possible with other units in the Pittsburgh area. See www.stat.cmu.edu (email: hire@stat.cmu.edu). Send CV, research papers, relevant transcripts, and three recommendation letters to: Faculty Search Committee, Statistics, Carnegie Mellon University, Pittsburgh, PA 15213. Application screening begins immediately, continues until positions closed. Women and minorities are encouraged to apply. AA/EOE.

■ Possible teaching-track position. Collegial environment emphasizing disciplinary and cross-disciplinary research and teaching. Position emphasizes teaching, program

administration, curriculum development. Joint appointments possible with other units at CMU. See www.stat.cmu.edu (email: hiring@stat.cmu.edu). Send CV, teaching statement, relevant transcripts, and three recommendation letters to: Faculty Search Committee, Statistics, Carnegie Mellon University, Pittsburgh, PA 15213, USA. Application screening begins immediately, continues until positions closed. Women and minorities are encouraged to apply. AA/EOE.

Virginia

■ Riverside Health System is seeking a biostatistician. They will serve as the trial preview/longitudinal and statistical design specialist and is responsible for providing statistical expertise to the internal review board, the director of research design and compliance, the director of grant development and coordination, and research study principal investigators. Riverside offers a competitive salary and benefits to include: tuition reimbursement, health/dental/retirement/life insurance and more! www.riversideonline.com/careers EOE. ■

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Yale SCHOOL OF PUBLIC HEALTH

Tenure-track Faculty Positions in Biostatistics

New Haven, Connecticut

The Department of Biostatistics in the School of Public Health at Yale University is seeking applicants at the rank of Assistant Professor. Recent graduates and applicants with experience in the development and application of statistical methodology in the following areas: image analysis, spatial statistics, survey sampling, clinical trials, Bayesian statistics, missing data, network analysis, and causal inference are encouraged to apply.

The Yale School of Public Health is committed to growing and extending its expertise in biostatistics. There are existing collaborations with the School of Medicine, particularly with the Yale Center for Clinical Investigation (Yale CTSA) and Cancer Center; and throughout the university. Successful candidates will be expected to develop an independent program of methodological research in their area of interest, while cultivating collaborations with other investigators in the School of Public Health, the School of Medicine and the University. In addition, successful candidates will be expected to teach graduate courses.

Review of applications will commence on October 1, 2013 and will continue until a successful candidate is identified. Applicants should have a PhD by the start of appointment in statistics, biostatistics, or a closely related field. Applicants are asked to prepare PDF files that contain a cover letter, curriculum vitae, statement of research and teaching interests, copies of up to five recent publications and contact information for three references. Please apply online at:

<https://academicjobsonline.org/ajojobs/2940>

For additional information and inquiries please contact:

Peter Peduzzi
Biostatistics Search Committee Chair
Email correspondence: biostatistics.search@yale.edu
www.yale.edu/lysph

Yale University is an affirmative action/equal opportunity employer. Yale values diversity in its faculty, students, and staff and especially welcomes applications from women and underrepresented minorities.



The Department of Biostatistics at The University of Iowa College of Public Health invites applications for tenure-track assistant professor positions. A PhD or equivalent in biostatistics, statistics, or a related area, as well as evidence of excellent written and oral communication skills are required. Candidates with expertise in the areas of statistical genomics, clinical trials, Bayesian methods, or a combination of these areas are of particular interest.

See <http://jobs.uiowa.edu/> (requisition #62969) for the complete position description and electronic application information. Applicants should arrange to have three letters of reference emailed to biostatistics@uiowa.edu.

Additional information about The University of Iowa is available at www.uiowa.edu. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

FRED HUTCHINSON CANCER RESEARCH CENTER

Associate Member, Vaccine and Infectious Disease Division (25365)

About Us: Fred Hutchinson Cancer Research Center, home of three Nobel laureates, is an independent, nonprofit research institution dedicated to the development and advancement of biomedical research to eliminate cancer and other potentially fatal diseases. Recognized internationally for its pioneering work in bone-marrow transplantation, the Center's five scientific divisions collaborate to form a unique environment for conducting basic and applied science. The Hutchinson Center, in collaboration with its clinical and research partners, the University of Washington and Seattle Children's, is the only National Cancer Institute-designated comprehensive cancer center in the Pacific Northwest. Join us and make a difference!

Responsibilities: The Vaccine and Infectious Disease Division (VIDD) at the Fred Hutchinson Cancer Research Center is seeking a faculty member at the Associate Member rank to provide leadership for a large program that functions as a statistics and data center for multisite, international clinical trials in infectious disease research. The successful candidate will possess a proven track record of obtaining federal funding, and experience in leading multi-disciplinary research programs. He or she will have established a reputation for excellence in research design, statistical methods development, and implementation of complex, population-level biostatistical analyses. Candidates must hold a doctoral degree in statistics, biostatistics, mathematics, or related fields.

VIDD scientists integrate computational, laboratory and clinical research methods to advance the understanding of microbial pathogenesis and infectious disease processes. VIDD has collaborative programs with laboratory, clinical and field sites in Africa, Asia, South America, and Europe. The person selected will have the opportunity to expand collaborations within this global network and with scientists at local institutions such as the University of Washington.

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How to Apply: Interested candidates should submit a CV, a concise research plan (1-2 pages), and the names and email addresses of three (3) references to: Dr. Steve Self, viddfao@fhcrc.org.

Applications should be received by September 30, 2013 to assure consideration. Later applications may be considered if the position has not been filled.

The Fred Hutchinson Cancer Research Center and The Seattle Cancer Care Alliance are equal opportunity employers, committed to workforce diversity.

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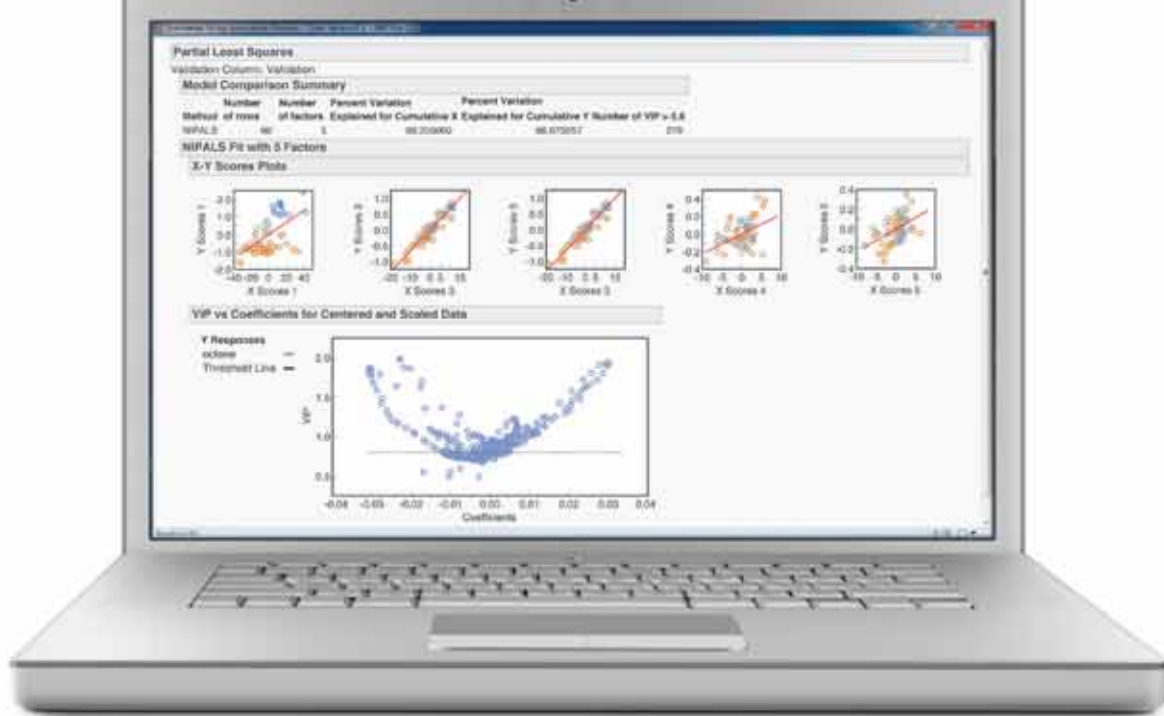
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