July 2011 • Issue #409

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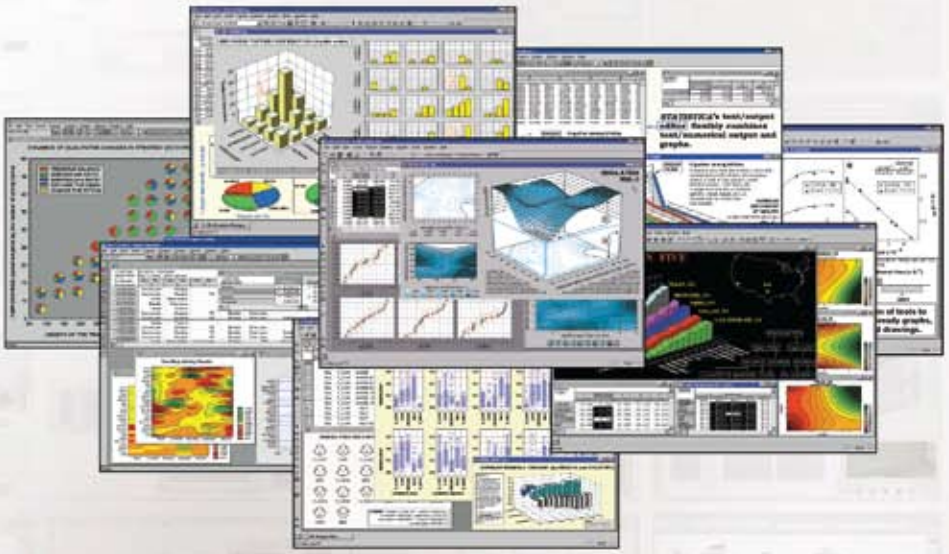

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The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education,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

features

columns

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

Davidian

Contributing Editors

2012 ASA President Marie Davidian is William Neal Reynolds Professor of Statistics at North Carolina State University. She is a Fellow of the ASA, Institute of Mathematical Statistics, and American Association for the Advancement of Science and an elected member of the International Statistical Institute. Davidian has served as editor of Biometrics *and earned several awards, including the Award for Outstanding Statistical Application.*

Fuentes

Montserrat "Montse" Fuentes is head of the department of statistics at North Carolina State University. She earned her bachelor's degree in mathematics and music (piano) from the University of Valladolid (Spain) and her PhD in statistics from the University of Chicago (1999). An ASA Fellow, Fuentes is the editor of the Journal of Agricultural, Biological, and Environmental Statistics *and has authored more than 55 publications.*

Arroway

Pam Arroway earned her PhD in statistics from Iowa State University in 1999. She joined the department of statistics at North Carolina State University shortly after graduation and has been there ever since. She is currently assistant department head and co-director of graduate programs for one of the largest and oldest statistics programs in the country. Her current interests are in pipeline, mentoring, and work force issues in the field of statistics, as well as statistics education.

Online Articles

Many of the sections and committees are sponsoring events at this year's JSM in Miami Beach, Florida. For details about these events and other news, make sure you visit our section, chapter, and committee pages online at *http://magazine.amstat.org*.

The ASA-SIAM book series will have a booth in the exhibit hall at the Joint Statistical Meetings, where you can shop for books at 20%–30% off list price. There will be new and classic titles in many areas of statistics and applied probability, as well as books about data mining, imaging, and inverse problems and how-to guides for LaTeX and MATLAB. Visit *http://magazine.amstat.org/blog/2011/06/09/siamjul11* to view details about what SIAM has in store for JSM.

Statistics Without Borders (SWB), an ASA outreach group, is planning its annual business meeting during JSM in Miami Beach, Florida. The meeting will be held on August 2 at 4:30 p.m. at the Loews Miami Beach Hotel, American Salon 3. All SWB members are invited to attend, as well as anyone who would like to learn more about the group. SWB was established in 2008 and provides a focus for pro bono statistical consulting. For details, visit *http://magazine.amstat.org/blog/2011/06/09/swbjul11* or go to the SWB website at *http://community.amstat.org/AMSTAT/StatisticsWithoutBorders/Home/Default.aspx*.

departments

member news

Prioritizing ASA's Science Policy

Steve Pierson, ASA Director of Science Policy

In March of 2008, the ASA created an Office of Science Policy to better integrate statisticians into the policymaking process. With the ASA's office located so close to Washington, DC, the opportunity to interact with national policymakers beckoned and creation of this office took advantage of the opportunity to make the ASA's presence and interests known to Congress and more broadly. The office also actively advocates for statistics research funding and funding for the federal statistical agencies. This month, ASA Director of Science Policy Steve Pierson describes how the ASA chooses the policy issues in which to engage.

~Nancy Geller, ASA President

The goals of the ASA's science policy activities are to raise the profile of statisticians in policymaking and advocate for the interests of statisticians. With statisticians' interests and expertise being so diverse, trying to cover all the topics that fit within these goals is difficult, which leads to the question of how the ASA's science policy activities are chosen and prioritized.

To be considered a candidate for a science policy activity, the activity might fall into one or more of the following categories:

Subject-matter interest: Are there members who have expertise or interest in the topic? Topics that fall into this category include election auditing, climate change, the U.S. financial system, forensic science, and educational assessment.

Member or ASA need: For example, the K–12 statistics education bill reflects the need to educate decisionmakers about the importance of statistical literacy for students. The ASA's work to facilitate federal scientists serving in ASA leadership responds to the importance of federal statisticians being represented in ASA governance. One also could put into this category the ASA's support for the budgets of the National Institutes of Health (NIH) or National Science Foundation (NSF).

Federal statistical agency need: I put federal statistical issues into their own category because of their importance to the ASA as the producers of statistical data that moves markets and determines representation in the U.S. House of Representatives. As such high-profile statistical data producers, it's important to ensure they have the resources and autonomy to do their job effectively and efficiently. This is why the ASA has supported more autonomy and/or stature for the U.S. Census Bureau, Bureau of Justice Statistics, IRS Statistics of Income Division, and National Center for Education Statistics.

Congressional, administration, or other political developments: The ASA monitors bills in Congress and or administration actions and acts according to ASA interests. This has reinforced the ASA's work on forensic science, K–12 statistics education (because of the expected re-examination of the Elementary and Secondary Education Act), and the federal statistical agencies. One also could put support of

the budgets for NIH, NSF, and the statistical agencies into this category because of Congress's annual budget considerations.

Once a possible topic is identified, many factors are considered to determine the ASA's priorities. I often bring issues to the ASA Board for discussion and input. The board may authorize actions or make official statements. No policy issue is pursued without approval from the board or ASA executive committee.

Further considerations for policy activities include the potential benefit to ASA membership, whether there is a concern in our broader community to leverage, and the likelihood of success. Broader community concern could come in the form of a report from other professional associations or the National Academies. Many policy activities require membership involvement, so we must evaluate whether members are available to volunteer their time.

I can't emphasize enough the importance of ASA membership involvement in our science policy activities. ASA members are key to identifying possible science policy activities, educating ASA staff and leadership, and carrying out science policy actions.

Current activities include visiting congressional representatives to gain support for the Statistics Teaching, Aptitude, and Training Act of 2011 (STAT Act of 2011), a bill to promote K–12 statistics education through teacher professional development and other programs. You can read about our ongoing activities on the ASA website (*www.amstat.org*) and in *Amstat News*.

Your input is welcomed. If you have suggestions for an ASA science policy action, please contact me at *pierson@amstat.org* or contact a member of the ASA leadership. Their email addresses can be found at *www.amstat.org/about/leadership.cfm*. ■

2011 Election Results

Here are the 2011 election results for the 2012 ASA Board of Directors and chapter and section officers. All their terms will begin January 1, 2012.

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NSF Director Recognizes Importance of Statistics

Ron Wasserstein, ASA Executive Director

Photo by Justin Knight

Subra Suresh

In October of 2010, Subra Suresh became the 13th director of the National Science Foundation (NSF). In May, ASA Executive Director Ron Wasserstein conducted an interview with Suresh to find out his views about the statistics discipline.

Photo by Christy Bowe- ImageCatcher News

Subra Suresh is sworn in as NSF director in a ceremony at the Eisenhower Executive Office Building in Washington, DC. John P. Holdren, White House science advisor and director of the White House Office of Science and Technology Policy, administers the oath while Suresh's wife, Mary, looks on.

Suresh's Background

Suresh has an engineering background, primarily mechanical engineering. He has a bachelor's degree from the Indian Institute of Technology in Madras, a master's degree from Iowa State University, and a doctorate from MIT. Upon completion of these degrees, Suresh did a postdoc at the University of California, Berkeley, where his research expanded to include materials science. After 10 years on the faculty at Brown University, Suresh moved to MIT as the R. P. Simmons Professor of Materials Science and Engineering. He became department chair in 2000 and dean in 2007. He remained dean until joining NSF. To read more about Suresh, visit *www.nsf.gov/news/speeches/suresh/suresh_bio.jsp*.

Connection to Statistics

Suresh claims no direct connection with statistics, though a daughter is working on a master's degree in epidemiology and biostatistics at Northwestern University. He does agree with its importance, however. For example, he recognized the need to understand statistics and probability in order to make sense of the fatigue of materials. In addition, as the dean of engineering at MIT, he realized the need for teaching students the ability to solve problems that involve non-deterministic analyses, statistical estimates, and risk assessment.

Era of Data and Information

In his presentation of the president's budget request for NSF, Suresh called this "the era of data and information." At MIT and NSF, he sees research excitement in all areas of science and engineering. But, across all these areas, two points stand out. First, we have the use of so many tools for observation. From telescopes all over the world and out in space to environmental monitoring devices and powerful microscopes, the reach of NSF scientists goes from the smallest scale to the largest. With our computational abilities, we can record and store unprecedented amounts of data from these devices.

Intellectually, science is crossing traditional disciplinary boundaries. We can study not only the biology of the brain, but also our cognitive processes, and we are now able to collect data that link the two. Energy is always in the news these days. But, energy policy must be based not only on the physical science of what's available and practical, but also the social and political science of what people will accept and how much they are willing to change. Data also is being created in other ways, not just from scientific devices. Social network sites and other businesses are also producing large amounts of data. Scientists will use this data in a progression from data to information and eventually to new knowledge. That is the scientific process: to collect data; sort, analyze, and filter it; and learn from it. Statistics is right in the middle of this. Within NSF, the National Center for Science and Engineering Statistics (NCSES) will play a major role. (NCSES was formerly the Division of Science Resources Statistics.)

Why the Job Is Exciting

Being chosen to be NSF director is obviously a great honor. It shows the best side of the United States, that opportunities really are open to everyone. In

2010, NSF provided support for more than 200,000 individuals through grants to about 2,100 institutions. NSF plays a vital role in human capital development. NSF provides more than 20% of all federal research funding to universities and more than 50% of the nonmedical funding. At the individual discipline level, 64% of federal funding for university research in mathematics and 82% in computer science came from NSF last year. The Graduate Research Fellowship (GRF) Program began in 1952. With the 2,000 awards made in 2010, more than 46,000 individuals have now received these awards.

The Challenges

It is important to articulate the benefits of long-term research. Research produces long-term individual benefits and also economic benefits for the country. When William Gladstone asked Michael Faraday how his research in electricity would benefit society, Faraday responded, "One day, sir, you may tax it." At this time of huge national debt, it is imperative not to lose sight of the need for a long-term perspective for science.

We are facing unprecedented competition from international sources. In 2000, the United States was surpassed in terms of their non-defense research spending as a fraction of their gross domestic product. China is growing their research significantly in its next five-year plan, while the United States is facing drastic cuts in discretionary spending.

We need to maintain a strong STEM (science, technology, engineering, and mathematics) work force. The number of women who go into many science disciplines is increasing. That's an encouraging sign, but many do not stay in the work force. We need to figure out how to keep them. By 2040, the United States will be a country that consists of a majority of minorities. But, these minority groups are not adequately represented in the STEM work force. We must make sure everyone has the opportunity to study and work in the STEM disciplines. And we must provide encouragement to those who are under-represented. For many years, the United States has trained and retained the best from throughout the world. But, there are growing concerns that we may lose this advantage if our scientific research enterprise is not adequately funded. In all these areas, NSF has a huge role to play. ■

Women in Statistics Conference: How Can You Get Involved?

Dalene Stangl, ASA Committee on Women in Statistics Chair

Through their strategic initiative program, the ASA has provided seed support for a "women in statistics" conference to be held in 2013. Amanda Golbeck, Lynn Palmer, and Jennifer Parker—current, future, and past presidents of the Caucus for Women in Statistics—and Dalene Stangl, chair of the ASA Committee on Women in Statistics are the organizers. The conference will bring together statisticians from academia, government, and industry to celebrate the contributions of women in statistics and promote the status of women in the field. The conference program will support the following four objectives:

- Promote the status of women in statistics via reviewing the status of women, raising and exploring issues specific to women, and identifying skills to enhance the visibility and effectiveness of women
- Support the integration of women into statistics via acknowledging and highlighting diverse career pathways, highlighting various ways of adapting to detours along typical pathways, and integrating women at different career stages
- Provide professional development for women in statistics via professional development workshops, including negotiation skills, public speaking, and technical skills
- Build supportive networks and learning communities for women in statistics via roundtable discussions, world cafés, and celebrations of legacy women

How can you get involved? There will be three meetings during JSM in Miami Beach, Florida, at which conference planning will be discussed. Attend any or all three:

- July 21, immediately following the First-Time Attendee Orientation and Reception
- August 1, 7:00 a.m. - 8:30 a.m. at the caucus breakfast roundtables (HQ-Americana Salon 4)
- August 2, 5:00 p.m. - 6:30 p.m. at the caucus business and social meeting (HQ-Neptune)

Won't be at JSM or can't wait that long? Send an email to Golbeck (*amanda.golbeck@umontana.edu*), Palmer (*lpalmer@mdanderson.org*), Parker (*jdparker@aol.com*), or Stangl (*dalene@stat.duke.edu*). ■

Meeting Within a Meeting (MWM)

Statistics Workshop for K-12 Mathematics and Science Teachers

(*www.amstat.org/education/mwm*)

Sponsored by the American Statistical Association (ASA)
2011 Joint Statistical Meetings (JSM)*

★ ★ ★

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

Dates: Tuesday, August 2, and Wednesday, August 3, 2011, 8:00 a.m. to 3:30 p.m.

Places: Miami Beach Convention Center, 1901 Convention Center Drive, Miami Beach, FL 33139-1820, and neighboring hotels (workshop meeting room location to be announced)

Audience: K–12 mathematics and science teachers. Multiple mathematics/science teachers from the same school are especially encouraged to attend. Note: Experienced AP Statistics teachers should register for the Beyond AP Statistics (BAPS) workshop. See *www.amstat.org/education/baps* for more information.

Objectives: Enhance understanding and teaching of statistics within the mathematics/science curriculum through conceptual understanding, active learning, real-world data applications, and appropriate technology

Content: Teachers will explore problems that require them to formulate questions; collect, organize, analyze, and draw conclusions from data; and apply basic concepts of probability. The MWM program will include examining what students can be expected to do at the most basic level of understanding and what can be expected of them as their skills develop and their experience broadens. Content is consistent with Common Core standards, GAISE recommendations, and *NCTM Principles and Standards for School Mathematics*.

Presenters: GAISE report authors and prominent statistics educators

Format: Tuesday: Grades K–4 and 9–12 sessions
Wednesday: Grades 5–8 session
One-day pass to attend activities at JSM (statistics education sessions, poster sessions, exhibit hall)
Activity-based sessions, including lesson plan development

Provided: Refreshments
Complimentary one-day pass to attend the Joint Statistical Meetings
Lodging reimbursement (up to a specified amount) for teachers from outside the Miami area
Handouts
Certificate of participation from the ASA certifying professional development hours
Optional graduate credit

Cost: The course fee for the two days is $50. Note: Course attendees do not need to register for the Joint Statistical Meetings to participate in this workshop.

Follow up: Follow-up activities and webinars (*www.amstat.org/education/k12webinars*)
Network with statisticians and teachers to organize learning communities

Registration: Online registration available at *www.amstat.org/education/mwm*. Space is limited. If interested in attending, please register as soon as possible.

Contact: Rebecca Nichols, *rebecca@amstat.org*; (703) 684-1221, Ext. 1877

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

Meet Bureau of Transportation Statistics Director Patricia Hu

Amstat News invited Patricia Hu, director of the U.S. Department of Transportation's Bureau of Transportation Statistics, to respond to the following questions so readers could learn more about her and the agency she directs. Look for other statistical agency head interviews in past and forthcoming issues.

BTS Fast Facts

Part of the Department of Transportation Research and Innovative Technology Administration (RITA)

Website: *www.bts.gov*

Fiscal Year 2010 budget: $27 million

Staff Size: 70

What about this position appealed to you?

It was an offer I could not pass up. It gives me an opportunity to help the Bureau of Transportation Statistics (BTS) become the "glue" that integrates transportation mode-specific data and analysis perspectives, both within and outside the U.S. Department of Transportation (DOT). The position gives me the opportunity, during this exciting era of advancements in innovative IT technologies, to enhance the quality and timeliness of transportation statistics to improve the well-being of individuals and business productivity.

Describe the top 2–3 priorities you have for the Bureau of Transportation Statistics.

My goal is for BTS to work with other DOT agencies to compile, analyze, and publish comprehensive sets of multimodal transportation statistics that are timely and useful for (1) describing the state of transportation systems, (2) diagnosing system performance and its contributing factors, (3) evaluating the impacts of both private and public investments, and (4) identifying emerging issues and challenges in transportation and how they might be addressed.

To attain that goal, one priority is to harvest data generated by private-sector mobile technologies and other public-sector IT technologies, and to integrate them with data generated through conventional surveys and administrative records toward developing a comprehensive statistical infrastructure.

Another priority is to develop visual analytical tools to enhance diagnostic analysis and more effectively communicate key insights distilled from massive amounts of transportation data so as to better inform policy, investment, planning, and operations decisions.

What do you see as your biggest challenge(s) for BTS?

BTS's challenges reflect the complex and intricate nature of our nation's transportation infrastructure, both in terms of physical assets and the services provided. The complexity is compounded by the diverse ownership of the physical assets, spatial and temporal shifts in travel, unique transportation requirements of emerging demographic sectors (e.g., the aging population, new immigrants), coordination challenges among public and private service providers, shrinking resources, and need to restore or replace aging assets.

To meet the informational needs of operating, managing, and planning these assets and services, the development of transportation statistics infrastructure and data models needs to do the following:

Address the connectivity of transportation systems across different modes. Although much of people's travel is by a single mode (either personal vehicles on roadways, public transit, or biking), no freight is moved from producers to consumers by a single mode.

Understand how critical transportation infrastructure is. To prioritize transportation investment decisions or develop operations strategies, information is needed to understand their effects and the tradeoffs among options. Assessments of criticality need to take into account not only the physical attributes, but also the operational characteristics of an asset.

Provide information about the consequences of transportation systems. Data need to be available to estimate the economic impacts of

Patricia Hu is director of the U.S. Department of Transportation's Bureau of Transportation Statistics. Formerly director of the Center for Transportation Analysis at Oak Ridge National Laboratory, she led research for which she received the National Research Council Transportation Research Board's (TRB's) Pyke Johnson Award, YWCA Tribute to Women Award, and the Association for Women in Science Award.

transportation systems, diagnose the causes of accidents and crashes, project energy and vehicle-technology needs, and identify and evaluate environmentally friendly strategies.

How can the statistical community help you?

In my first three months as BTS's director, I have been amazed to learn more about the collective and collaborative efforts undertaken by the statistical community to continue to improve our statistical products, despite our shrinking resources. Examples are the Inter-Agency Council on Statistical Policy's effort to develop and share approaches to solve common problems, the American Statistical Association's support to re-establish the Transportation Statistics Interest Group, the Committee on National Statistics's initiative to tackle significant challenges facing future household surveys, and the Federal Committee on Statistical Methodology's dialogue to improve the quality of statistical information. I encourage and support these types of efforts and hope they continue.

Prior to your tenure, what do you see as the biggest recent accomplishment of the agency?

I hope to maintain and expand on BTS's many accomplishments. Our Commodity Flow Survey is the primary source of national data on the flow of goods, including data on origin and destination, distance, and mode of transportation. In collaboration with the U.S. Census Bureau, BTS has significantly improved data quality, the coverage and delineation of different economic sectors, and the precision of the estimates.

BTS collects and releases the most comprehensive and timely airline-related data, including on-time performance, financial statistics, traffic flows, and trends on airfare. These data are widely used for rule-making, compliance review, and research to improve the effectiveness and efficiency of air traffic operations. BTS has significantly improved data quality by implementing multiple tiers of validation and verification procedures. BTS is recognized internationally as a knowledge gateway to data, statistics, reports, and related materials on numerous facets of transportation. This has been achieved in large part by the implementation of the National Transportation Knowledge Networks.

To illustrate the importance of transportation statistics, please provide an example of how data not currently produced could have helped to better guide transportation policy in recent years.

The Vehicle Inventory and Use Survey (VIUS) had been providing data on the physical and operational characteristics of our nation's private and commercial truck population. Its goal is to produce national- and state-level estimates of the total number of trucks and their usage patterns. This survey was conducted every five years, but was discontinued in 2002.

With freight traffic being an intrinsic element of economic productivity and global competitiveness, the pain of not having VIUS statistics is widely felt. For the transportation community, how to operate better, plan for, and invest in transportation systems cannot be accomplished well without knowledge of freight traffic. From a safety perspective, truck safety issues and effective countermeasures cannot be understood well. From the energy and environmental perspectives, the impacts of innovative vehicle technologies on energy security and environmental sustainability cannot be accurately assessed.

What will be the role of RITA and ACTS to help you achieve your top priorities?

The coverage and quality of transportation statistics will benefit from collaborations among RITA's programs. For example, transportation statistics can be more complete and timely by leveraging data collected by RITA's Intelligent Transportation Systems Program. Data quality issues can be identified and solutions developed through the academic community engaged in RITA's University Transportation Center Program. Statistics and decision support tools can be more strategically developed in collaboration with RITA's Volpe National Transportation Systems Center.

ACTS has been instrumental in identifying critical data gaps and limitations, as well as offering advice about how to address them. Furthermore, the unique missions and activities of the different members and stakeholders brought together by ACTS enable BTS to develop a more informed and holistic statistical program that takes advantage of their diverse perspectives and insights. ■

ASA Participates in Capitol Hill Event Supporting NSF

The ASA was represented by Peter Craigmile of The Ohio State University (OSU) during a Capitol Hill annual event on May 11 that highlighted research funded by the National Science Foundation (NSF).

The 17th Coalition for National Science Funding (CNSF) Capitol Hill Exhibition and Reception, which featured booths hosted by 30 science organizations and universities, attracted 300 people, including five members of Congress and scores of congressional and NSF staff. The large attendance and constant buzz at the event conveyed the excitement over NSF-funded research.

Prior to the event, Craigmile and ASA Director of Science Policy Steve Pierson visited staffers for four freshman members and two appropriators in the Ohio delegation to discuss the connection between science research and Ohio's economy. As an example of this connection, Craigmile noted that OSU graduates who go to work for Ohio companies take with them the latest research developments to help those companies be more competitive.

While most of the staffers seemed to understand the importance of science research to economic growth, all noted the tough fiscal environment making any increases for science research budgets a challenge.

Craigmile's poster featured his work on space-time statistical modeling as applied to climatology.

The ASA urges its members to contact their elected officials in Washington, DC, about the importance of NSF and National Institutes of Health research. Contact Pierson at *pierson@amstat.org* for further guidance and materials. ■

Photo courtesy of Steve Pierson

Peter Craigmile of The Ohio State University with Sastry Pantula, head of the Division of Mathematical Sciences at the National Science Foundation (NSF), during the Capitol Hill annual event highlighting research funded by the NSF

Introducing SPM

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Since 2000, no other vendor has come close to our record of consistent out-performance.

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INFORMS 2009
Healthcare Quality Task

2009 KDDCup
CRM task, telecom dataset

2008 DMA Analytics Challenge
Direct Marketing Optimization task

2008 Scientific Computing
Data Mining Readers' Choice Award

2007 DMA Analytics Challenge
Targeted Marketing task

2007 PAKDD
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2006 PAKDD
Upselling task, telecom dataset

2004 KDDCup
Particle Physics task

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The PhD

Keith Crank, ASA Research and Graduate Education Manager

I want to begin this article with three questions, addressed to three audiences:

1. Department chairs/heads: How difficult is it to fill your faculty vacancies?

2. Faculty with PhD students: How difficult is it for your PhD students to find a job when they graduate?

3. Recent PhD graduates: How difficult was it for you to find a job?

A recent issue of *Nature* (Vol. 472, Issue 7343) contains a number of articles about the PhD. Many question the value of a PhD, especially as it now exists. A primary concern of the authors is whether there are too many PhDs being produced and whether there are enough jobs for them. A problem with these articles is that all disciplines are lumped together and the difficulties of a few are viewed as a sign that we need to change everything.

Are we producing too many statistics PhDs? I don't think so. Let's begin by looking at some numbers. (Various reports from the American Mathematical Society (AMS) are used here and available at *www.ams.org/profession/data/annual-survey/annual-survey*.) According to the AMS, there are about 1,800 statistics and biostatistics faculty in PhD-granting departments of statistics and biostatistics. If the typical faculty member has a 40-year career, we would need 45 PhDs per year to replace those who are leaving (in a steady-state scenario). But, these are not the only statistics faculty. There are also faculty at colleges and universities that do not produce PhDs in statistics or biostatistics. To estimate the number of faculty needed in those places, I will use student enrollment data.

At the universities that have PhD-granting departments of statistics or biostatistics, there were about 2 million students enrolled in the fall of 2009. There were more than 3.5 million additional students at PhD-granting universities that do not have a PhD-granting department of statistics or biostatistics. This suggests we need an additional 78 PhDs to fill those faculty positions. That would bring us to a need for 123 new PhDs each year.

But, we haven't included colleges that don't offer a PhD. There are roughly an equal number of students enrolled in those institutions as there are at the PhD-granting universities. Recognizing that teaching loads are generally higher in these institutions, let's say we would need half as many faculty members (61) to teach the same number of students. That brings us to 184.

Based on the AMS surveys, nonacademic employment absorbs another 125 or more new statistics PhDs each year and roughly 50 leave the United States. So, the minimum number of statistics and biostatistics PhDs needed each year is slightly more than 350.

But, there are many reasons to believe this is not enough. To begin with, steady state suggests PhD-granting departments of statistics and biostatistics should be hiring about 45 new faculty members each year. Using AMS data again, these PhD-granting departments of statistics and biostatistics actually lost only 35 faculty to retirement and death (total for the last two years), but they filled approximately 115 faculty positions in each of the past two years. While some of these are likely due to movement of faculty from one university to another, that alone would not explain the difference. According to the AMS, the PhD-granting departments of statistics and biostatistics increased by more then 30% between 2000 and 2009 (or an increase of about 50 faculty members per year).

These numbers suggest 400 new PhDs in statistics and biostatistics is the minimum we should be producing. I view it as a lower bound because I did not include growth of statistics faculty in other mathematical sciences departments, nor did I include academic jobs in departments outside the mathematical sciences. (In 2009, 75 PhDs from statistics and biostatistics departments took academic jobs in departments outside the mathematical sciences.) In addition, U.S. government statistical agencies say they would hire more, if they were available. We could probably produce 500–600 per year without too much concern about them finding jobs.

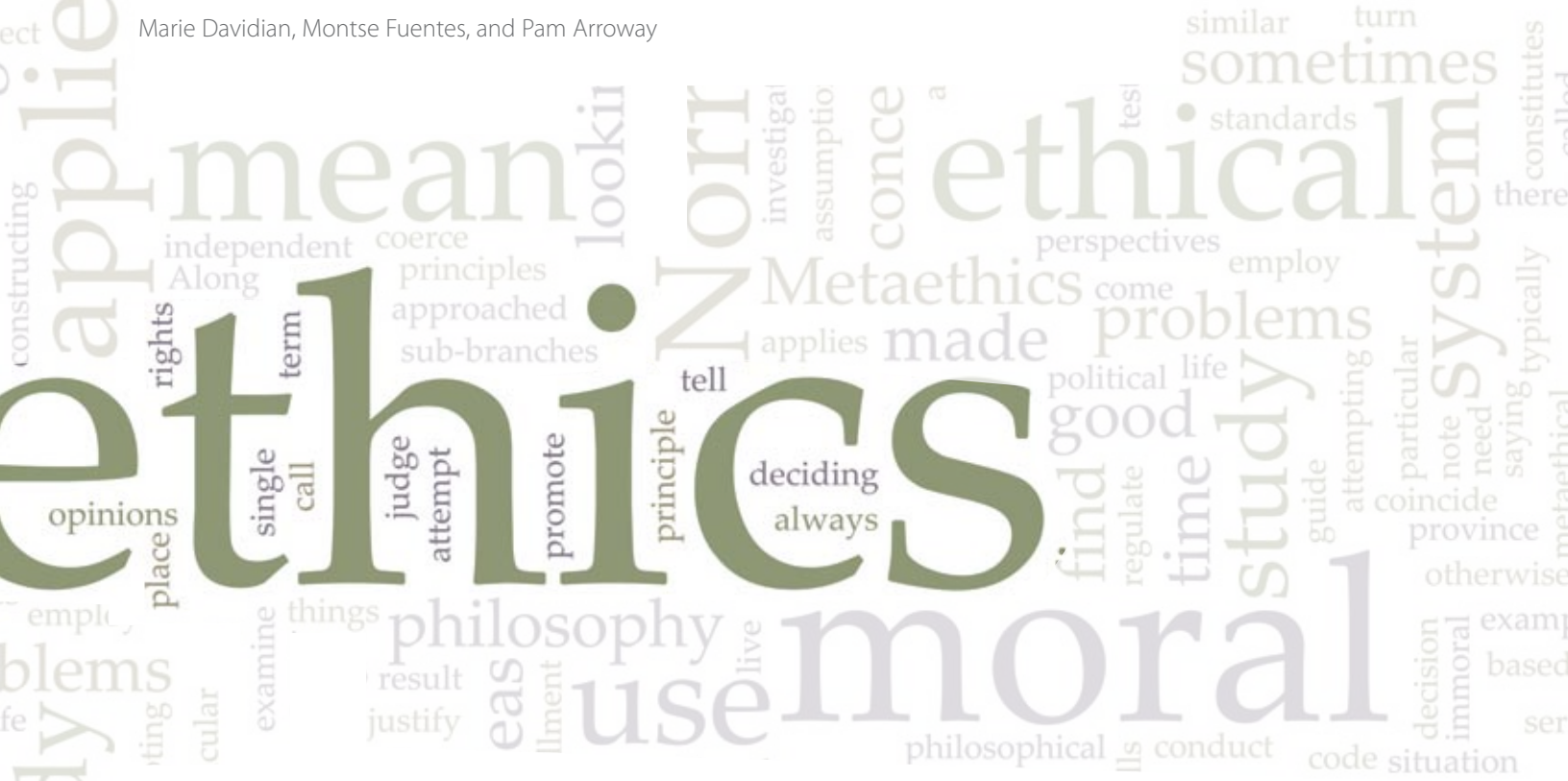
To contact me, send an email to *keith@amstat.org*. Questions and comments about this article, as well as suggestions for future articles, are always welcome. ■

Keith Crank earned a BS in mathematics education and an MS in mathematics from Michigan State University and a PhD in statistics from Purdue University. Prior to joining the ASA as research and graduate education manager, he was a program officer at the National Science Foundation, primarily in the probability program.

STAT*tr@k*

Professional Ethics for Statisticians: Issues and Advice

Marie Davidian, Montse Fuentes, and Pam Arroway



Recent media reports of alarming accusations of professional misconduct and questionable research practices by members of academia have inspired renewed discussion about professional ethics among both scientists and the public. In this article, we offer our thoughts about this important issue as it pertains to our discipline, with an eye toward students and statisticians just embarking on their careers and on how we—as a profession—train future statisticians.

The statistics discipline is concerned with the collection and interpretation of information (data), a task on which we are uniquely prepared to collaborate with investigators in other disciplines. In general, investigators are focused on pursuit of the truth. Excited investigators have hypotheses to verify, ideas to defend, and the hope that data may be collected that support these ideas. Excited statisticians want to assist their collaborators by providing elegant data analyses that answer meaningful questions. For knowledge in all disciplines to advance in an uncompromised manner, these efforts must be carried out in an honest and principled fashion, and we play a key role in ensuring that this is the case.

A statistician strives to present only what is reasonable to infer, to make limitations transparent, and to not be pressured by "special interests." Unfortunately, some collaborators might not think highly of statistics or statisticians and view us as "staff" who run software packages and, hence, should have little input into the final interpretation of analyses. Some researchers might view statistical methods as a "bag of tricks," where one can apply different methods until a favorable conclusion is obtained. It is our role to educate these investigators and to ensure that what is reported is reasonable and defensible, with the limitations clearly stated.

In other situations, collaborators might want to conduct a study to test a hypothesis, but have limited resources. It may be a waste, or downright unethical, to conduct a study that is too small (underpowered) or poorly designed. It is the statistician's obligation to be steadfast and to teach

collaborators what can reasonably be achieved within the resource constraints and to encourage them to consider the scientific relevance of a possible result given the limitations.

Given our unique role, a guiding tenet of our profession is that it be practiced independently and with principle, honesty, integrity, and fairness, and we must train the next generation of statisticians to do the same. Many graduate programs in statistics or biostatistics have ethics training integrated into the curriculum in an informal way. But, we are sometimes disappointed by our students' behavior and later say, "I didn't know I had to tell him/her not to do that."

Ethics training for statisticians must be deliberate. Both the National Institutes of Health and National Science Foundation require students supported by grants to receive some sort of responsible conduct of research (RCR) training. RCR training should include how to work with nonstatistician researchers, the publishing process, and ethics and responsibility in teaching. The ASA has developed ethical guidelines (*www.amstat.org/about/ethicalguidelines.cfm*), but how many statistics or biostatistics programs (graduate or undergraduate) are educating students deliberately about these guidelines? Training to work with nonstatistician researchers should be integrated into every course involving data. The integration must be purposeful, not just assumed and left to when it comes up in an example. Programs should be able to identify which courses will contain ethical training for students. The ASA's ethical guidelines are a great starting point for discussion about where students will get this training in the curriculum.

In academia, the pressure to publish is considerable in any discipline. There is an eternal struggle of quantity versus quality, which can naturally lead to a temptation to send out work that is incomplete or to promote methods that are not sufficiently well studied. The objective of research and its publication is to advance knowledge. Thus, prior to submitting our papers, we should ask ourselves if our work represents a publication-worthy advance; if we have portrayed the advantages and disadvantages fairly and accurately; and if we have done our best to communicate our work clearly and effectively, rather than expecting editors/referees to do it for us. When acting as referees, we should resist the temptation to be competitive. The goal is to evaluate honestly and fairly whether the contribution is substantial enough to be communicated, regardless of its impact on our own work.

In teaching statistics or communicating statistical ideas, we carry a responsibility for completeness, honesty about what can and cannot be done, explaining the assumptions used, and staying up to date.

A frequent challenge for statisticians is authorship. For collaborative work, if one has made a contribution to a paper, he/she should be listed as an author. In some disciplines, there is a protocol for authorship. In others, there is no tradition of granting authorship to statisticians, and we may have to fight for recognition. Programs training statistical researchers should teach students about the written or unwritten rules of our profession for determining authorship and order of authors.

In teaching statistics or communicating statistical ideas, we carry a responsibility for completeness, honesty about what can and cannot be done, explaining the assumptions used, and staying up to date. Developing and maintaining a good course is hard work and time consuming, but promoting statistics to nonmajors (and majors) through clear and thoughtful teaching benefits the entire discipline. An easy, entertaining course and light

ethics

workload may please students in the short term, but fails them in the long term. Our goal is to communicate statistical thinking and principles in the best way we know how.

Students, it is important to get into this habit of working with honesty and integrity early in your career. Stephen Vardeman and Max Morris wrote an excellent article on this topic for *The American Statistician*, titled "Statistics and Ethics: Some Advice for Young Statisticians." (*www.amstat.org/committees/ethics/linksdir/TAS2003Vardeman.pdf*)

These authors not only discuss key principles of ethical conduct, such as working independently on assignments when asked to do so and treating all students fairly when acting as a teaching assistant, but they also provide guidance on personal responsibility to one's own professional development. In particular, coursework should be treated as an opportunity to learn and hone technical and applied skills and to cultivate an ability to work independently as preparation for your later work habits, not just a prerequisite for an "A."

Think about taking demanding (not "easy A") courses that will expand your knowledge and challenge your abilities, or courses beyond the minimum requirement for your degree. Your dissertation is an exercise in learning to work and think independently. Do not expect your advisor to "assign" the next task. Don't just get results, interpret them. Do the results make sense? Identify the next step yourself, investigate new approaches on your own, try new simulation scenarios, etc. By doing so, you will be developing skills that are critical to being a good statistician and building the confidence to defend ethical statistical practice when called upon.

The ASA's curriculum guidelines for undergraduate statistics curricula do not mention ethics training. We do not expect any of our colleagues would dispute that ethics training for students is important. At NCSU, we require all PhD students to take a course about statistical research that has some specific ethics content, although we certainly do not address all items in the ASA Ethics Guidelines. At the moment, we do not include any explicit ethics training in our undergraduate program. Integrating ethics training in our curricula as a discipline will enhance integrity of our profession and better prepare our students for the challenges they will face. And, most importantly, we must all act as role models. ■

Trust Your Science? Open Your Data and Code

Victoria Stodden, Columbia University Assistant Professor

Reproducibility in the computational sciences seems to be capturing everyone's attention. Movements to address the reliability of published computational results are arising in fields as disparate as geophysics, political science, fluid dynamics, computational harmonic analysis, fMRI research, and bioinformatics. Open data and code in climate modeling has taken on a new priority since ClimateGate in 2009 (i.e., *www.nature.com/news/2010/101013/full/467753a.html*), and *Amstat News* has recounted efforts to ensure reproducibility in genomics research in the wake of the termination of clinical trials at Duke University in December of 2010 (see *http://magazine.amstat.org/blog/2011/01/01/scipolicyjan11*).

These efforts are essential to addressing the growing credibility crisis in science. It is impossible to believe most of the computational results presented at conferences and in published papers today. Even mature branches of science, despite all their efforts, suffer severely from the problem of errors in final published conclusions. Traditional scientific publication is incapable of finding and rooting out errors in scientific computation, and standards of verifiability must be developed.

A smattering of these efforts will give a sense of the scope at which the community is addressing this issue. The Institute of Medicine of the National Academies is undertaking a consensus study titled "Review of Omics-Based Tests for Predicting Patient Outcome in Clinical Trials," (see *www.iom.edu/Activities/Research/OmicsBasedTests.aspx*), and sessions on reproducibility were held at SIAM Geosciences 2011, this year's AAAS annual meeting, and SIAM Computing in Science and Engineering 2011. Also, a three-day workshop is to be held at Applied Mathematics Perspectives this month (see *http://www.mitacs.ca/events/index.php?option=com_content&view=article&id=214&Itemid=230*).

In 2009, stakeholders from biology, computational chemistry, geophysics, law, astronomy, and other fields collectively drafted a declaration on data and code sharing in the computational sciences (*www.computer.org/portal/web/csdl/doi/10.1109/MCSE.2010.113* and *www.stanford.edu/~vcs/Conferences/RoundtableNov212009*). Since January of this year, the National Science Foundation has required data management plans to be peer reviewed with every grant application.

Open access to data and software are relevant to advancing trustworthy science and are discussed in the 2010 reauthorization of the America Competes Act (see *http://blog.stodden.net/2011/05/27/regulatory-steps-toward-open-science-and-reproducibility-we-need-a-science-cloud*). As we embrace and tackle this issue across the computational sciences, concepts are inevitably labeled with different terms and different concepts are emphasized. I will touch on the semantic and substantive differences in the various approaches to reliability in computational and data-enabled sciences.

Reproducibility, Replicability, and Repeatability

I learned from my advisor, Stanford professor David Donoho, that reproducibility meant releasing data and code such that others may regenerate your results on their own systems (i.e., releasing the full computational environment that produces a result). Donoho paraphrases Stanford professor Jon Claerbout, an early pioneer in reproducible research, as follows:

> An article about computational science in a scientific publication is not the scholarship itself; it is merely advertising of the scholarship. The actual scholarship is the complete software development environment and the complete set of instructions which generated the figures. *(http://sepwww.stanford.edu/doku.php?id=sep:research:reproducible:seg92)*

In our case, this typically meant releasing MATLAB scripts and data files, often along with a custom MATLAB GUI that permitted the user to select the figure he or she wished to regenerate, adjust parameter settings, and view the source code (*www-stat.stanford.edu/~wavelab*, *http://sparselab.stanford.edu*). Without open code and data, we cannot resolve differences in output between independent methods or independent implementations of even purportedly identical methods.

Replication, using author-provided code and data, and independent reproduction work hand-in-hand. We can reserve the term "replicability" for the regeneration of published results from author-provided code and data. Gary King, a Harvard professor, proposed the Replication Standard in 1995: "[T]hat sufficient information exists with which to

Victoria Stodden is assistant professor of statistics at Columbia University. She completed both her PhD in statistics and her law degree at Stanford University. Her current research focuses on how pervasive and large-scale computation is changing our practice of the scientific method: reproducibility of computational results, understanding factors underlying code and data-sharing among researchers, and the role of legal framing for scientific advancement.

understand, evaluate, and build upon a prior work if a third party could replicate the results without any additional information from the author." (*http://gking.harvard.edu/files/abs/replication-abs.shtml*)

Reproducibility is a more general term, implying both replication and the regeneration of findings with at least some independence from the code and/or data associated with the original publication. Both refer to the analysis that occurs after publication. A third term, "repeatability," is sometimes used in place of reproducibility, but this is more typically used as a term of art referring to the sensitivity of results when underlying measurements are retaken.

To summarize, we need replicability, in part, to resolve differences in outcomes that arise from reproduced computational results, regardless of whether the experiments have been repeated. We loosely say that results have been verified if we have reproduced them, but as standards for code quality in computational and data-enabled science increase, we should supplant this with the more precise definitions of verification, validation, and error quantification developed in scientific computing.

Data Evaluation Standards

The movement toward openness in computational and data-enabled science has a long and successful history in genomic research, evolving in part from pioneering efforts in response to the public/private race to decode the human genome in the 1990s. That community gathered in Bermuda in 1996 to develop a cooperative strategy for both genome decoding and managing the resulting data. Biologist and Nobel Prize winner John Sulston said, "The principle of data availability had to be endorsed at the Bermuda meeting or else mutual trust would have been impossible."

The meeting resulted in the "Bermuda Principles," which shaped the data-sharing practices among the researchers, ensuring rapid open release of human genome sequence data. The convention of releasing community statements continued as these principles were reaffirmed and extended three more times (most recently in July 2009: *Nature*).

The nature of the underlying research and the technology involved meant this discussion centered on open data and rarely mentioned code. Accordingly, a vocabulary was developed within this data-oriented context, such as the term "data provenance." What data provenance means depends on whether you understand data as a community resource and hence are interested in tracking modifications and updates to the data set, or as a local entity, and thus are interested in recording filtering and other data operations that ready it for analysis in a particular project. It also can refer to both, and both concepts are essential for effective reproducibility.

The term "research workflow" incorporates the latter definition (the changes made to data to prepare it for analysis), but also includes the analysis steps that generated the published results and other procedures that affect interpretation of the findings, such as otherwise unreported hypothesis tests.

It is very easy to underrate the importance of clarity in conceptualizing the role of data in open science. A quick glance at discussions in the blogosphere might lead a casual observer to think all that mattered is the openness of data. This stems from the framing dialogue in the pioneering days in human genome sequencing, combined with today's vastly increased capacity for data collection, but leads to a conclusion that is too simple. Transparency in the communication of scientific methodology arises from the notion of reproducibility in science. Open data is a prerequisite for verifiable research; reproducibility is not a convenient mechanism in support of the notion of big open data as if sometimes promulgated. Science has never been about open data per se, but openness is something hard fought and won in the context of reproducibility.

Scientists have scarce resources, and changing the scientific method to include open data for its own sake—untethered to our age-old concept of reproducibility—requires a deeper justification and understanding of the trade-offs involved. Open data in support of reproducibility is an enormous challenge in itself, and can best be accomplished in a principled way within our current system of scientific norms.

An Open Call to Computational Scientists

Making both the data and code underlying scientific findings conveniently available in such a way that permits reproducibility is of urgent priority for the credibility of the research and the elevation of computational and data-enabled research to a bona fide branch of the scientific method. The independent efforts occurring today in many disciplines and subdisciplines can inform each other and provide a guide for computational fields just starting to grapple with the issue of reproducibility. ■

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ASA members can now activate a free trial of the *Journal of Computational and Graphical Statistics* and *Technometrics* at *www.amstat.org/publications/trial*.

American Statistics Poster Competition: *How to Get Involved*

There are two ways your chapter or group can become part of the American Statistics Poster Competition: (1) sponsor a regional competition or (2) become a site to host judging.

Some Background

Currently, a student who wishes to enter a poster in the competition may enter through a regional competition, if one exists in their area (there is a large part of the United States not currently covered) or send their poster to the national ASA office. Regional competitions judge those entries and advance the top five posters in each grade category to the national judging.

All posters sent to the ASA office are judged as a pseudo-regional competition, in that the top five from each grade category are advanced to the national judging. It is different from a regional in that no prizes are awarded. For largely logistical purposes, the Washington Statistical Society (WSS) has been doing this judging. However, it is now hosting its own regional competition.

How Your Group or Chapter Can Help

It is possible for a chapter or group to gain experience by hosting the judging session for all posters without a regional competition. It requires a contact for the mailing of posters, organizing the posters into age categories, and obtaining a set of judges with time to choose the five best entries. Then, the top posters are mailed to the national judging. Cost would include mailing the posters, but this may be negotiable with the ASA office.

The second possibility is for a chapter to host the national judging. This requires similar work to that described above, but the posters would be coming from the established regional competitions, not from individuals. The award monies and prizes are coordinated by the ASA office; however, there would need to be a training session to ensure judges are consistent in the application of the judging rubric. The national poster chair and joint ASA-NCTM committee are committed to helping make this work. A first step might be to host the judging for the non-regional posters.

Starting a Regional Competition

Plan the Competition

When you start a regional competition, there are a few steps that make the effort more successful. Let the national office know so it can coordinate your competition with the national judging and offer advice and assistance. You may contact K–16 Education Manager Rebecca Nichols at *rebecca@amstat.org* for resources. Also, make sure you have an overall understanding of the time, money, effort, and rewards of starting a competition.

Announce the Competition

Make sure your deadlines, rules, and rubrics are aligned with the national competition. Decide on your prizes and funding strategy so you can announce them in the competition brochure. Design a competition brochure, which should include a deadline, prize awards, and rules. Decide how to get these brochures into teachers' hands (not a trivial task). This may mean purchasing mailing lists or cooperating with other associations. It is nice to use and promote a judging rubric so entrants know what to aim toward. Registration will be online through the ASA office, so it is important that you are in contact with them.

Promote the Competition

Try to make people available for classroom talks. Send announcements to local NCTM and school contacts. You might consider going through colleges or schools of education within a university. Encourage chapter/group members to promote to schools and with their children's schools. Send out brochures and announcements. Advertising in a newspaper may be costly, but there might be alternatives, such as cable public service announcements.

As the Entries Come In

Ensure that each poster has a registration form attached. Separate posters into the four age categories. Be prepared for many to arrive in the last days before the deadline. Decide who can be a judge. They might come from academia, industry, or government or be AP Statistics teachers, math teachers, chapter members, and/or graduate statistics students.

Secure judges and a judging day. It is best to plan for the judging to be a week after the deadline in case there are any stragglers (you decide when late is too late). Plan for a full day of judging. You may need to have a training session for judges.

Judging Day

Judge the competition using the appropriate rubric. Forward the top five entries in each grade level to the national competition.

Awards and Wrap-Up

You need to announce the winners. Making presentations to winners is a nice sign of respect for the students and their work. Many presentations are made during award ceremonies. Please be available to facilitate presentations for national awards if possible.

While the judging is fresh in your mind, consider writing a review of the competition to send to all the teachers who participated. Decide if it is feasible to return posters to nonwinners. Certainly, this keeps schools engaged. Posters of national winners are not returned.

Finally, revise your process and get busy for the next year.

If you have questions, contact Nichols at *rebecca@amstat.org* or Linda Quinn at *l.quinn@csuohio.edu*. ■

My Day as a Judge for the ASA K–12 Poster Competition

Justin Z. Smith, U.S. Census Bureau Mathematical Statistician

On April 30, a group of volunteers consisting of professional statisticians, teachers, and researchers gathered at the American Statistical Association's headquarters in Alexandria, Virginia, to serve as judges for the ASA's K–12 Poster Competition. After introductions, we were given a scoring rubric and instructions for the scoring process. We assigned a poster scores in various categories and placed a sticker on it to let others know we had reviewed it. I would estimate each person reviewed about 20 posters.

After we judged the posters individually, we voted as a group among our top choices for the first, second, and third places, as well as honorable mentions. Determining first- and second-place posters was straightforward, but there was often debate for third place and the honorable mentions.

I was impressed with the majority of the posters. Many addressed interesting research questions, contained decent graphical elements, and were statistically sound. My advice for students who want to enhance their posters is as follows:

- Don't add extra dimensions to your graphs if you don't need to. For example, if you have a 2D histogram of 2D data, don't make the histogram 3D.
- Try to print out your poster on one seamless piece of paper, rather than cut and paste pieces of paper to the poster board. Also, do not use distracting colors such as neon pink or neon orange. Make it look professional.
- Make your poster stand out (in a good way) from your peers' posters.
- Check your spelling.
- Make the fonts and graphics large enough to be seen from several feet away.
- Clearly state the source of your data.
- Design an experiment, rather than just finding data to analyze.
- Clearly state the study limitations and assumptions.
- Make sure to include labels on the axes of graphs.
- Make sure to state what you would improve if you were to study this subject again.
- If you have two plots and linear regressions, say X1 vs. Y and X2 vs. Y, consider doing a multiple linear regression of X1 and X2 vs. Y.
- Never state that the p-value = 0, even if that is what the computer output says.
- If you're doing linear regression, show why the assumptions for linear regression are plausible.
- Be sure to distinguish between descriptive statistics and inferential statistics.
- Have a research question that is interesting and has major impact on the world.
- Don't confuse the null hypothesis, H0, and alternative hypothesis, Ha.
- Don't handwrite anything on the poster.
- Make the conclusions crystal clear.
- If you have a point estimate, also supply a confidence interval.
- Interpret the Pearson correlation coefficient, r, and the coefficient of determination, r^2, correctly.
- Be cautious when using the computer program's default fonts and graphics. Just because something came out of the computer does not necessarily mean it is correct.
- Discuss your motivations for doing the project.
- Be sure to check out "What Is a Statistical Poster?" at *www.amstat.org/education/posterprojects/whatisastatposter.cfm* for additional advice.

If you are a K–12 student or teacher interested in submitting a poster for an upcoming poster competition, visit *www.amstat.org/education/posterprojects/index.cfm*.

JSM 2012 Invited Sessions Sought

Steven N. MacEachern, 2012 JSM Program Chair

MacEachern

The 2012 Joint Statistical Meetings will be held in San Diego—a sunny, temperate city on California's southwestern coast. In addition to a wonderful climate, San Diego features many attractions and a large turnout is expected. The time has come to put together proposals for invited sessions.

The theme for 2012 is "Statistics: Growing to Serve a Data-Dependent Society." The theme captures the tremendous impact our profession has on modern society via modeling, understanding, and analysis of data throughout scientific research, governmental policymaking, and decisionmaking in business and industry. It also captures the dynamic growth being driven by the new types, increasing complexity, and ever-expanding volume of data we collect, as well as our ability to process these data.

JSM invited sessions are always a highlight of the program, featuring cutting-edge work and attracting sizeable crowds. Most invited sessions spring from proposals put together by members of the sponsoring societies—that means you! Invited sessions can be posters, panels, or talks. For an invited panel, the session consists of three to six people who provide commentary, discussion, and engaging debate on a particular topic. An invited paper session consists of two to six people, including speakers and discussants.

The ideal invited session is about fresh, important work that many JSM attendees will find interesting. Many of the most stimulating sessions have divergent views on a topic, with all speakers coming from different institutions. With the wide-

ranging interests of attendees, you will need a theme and set of participants to organize a session. Once these are set, you can put together a proposal consisting of the title, a brief abstract for the session as a whole, the list of participants, and tentative titles of talks (and, yes, all are aware that the talks are a year off and that titles may change). From there, contact a member of the 2012 JSM Program Committee to see if they are willing to sponsor the session. They may accept the session outright for one of their allocated slots, or they may enter it into a competition, where selection is decided by a vote of the entire program committee.

The program committee includes the program chairs for the ASA sections and representatives of the partner societies: International Biometric Society (ENAR and WNAR), Institute of Mathematical Statistics, Statistical Society of Canada, International Chinese Statistical Association, and International Indian Statistical Association. There are also ASA committees and outside organizations that may sponsor invited sessions. A list can be found at *www.amstat.org/committees/committeelist.cfm*. If you have ideas that don't fit these sponsors, you may send them to me at *snm@stat.osu.edu*, although I have little discretion and will need to turn down most, if not all, such sessions. You will need to have your proposal ready by early September.

A particular highlight of recent JSMs has been the high quality and visibility of the poster sessions, where presenters have an opportunity for more extended one-on-one discussion of their work. Poster sessions come in two flavors—contributed and invited. An invited poster session typically consists of 10 to 12 participants whose work addresses a common theme, and many have been great community-builders. Ideas for invited poster sessions should be sent to Kristin Duncan at *duncan@sciences.sdsu.edu.*

The ASA has strict rules for participation, and they will be the same in 2012 as they are in 2011—the official guidelines can be found at *www.amstat.org/meetings/jsm/2011/index.cfm?fuseaction=guidelines*. Talk to potential speakers to ensure they are not "fishing for an invitation" by committing to more than one invited proposal. If you don't find success with your proposal, try again in the future, as there are always more fine sessions proposed than can fit into the program. ■

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Bani K. Mallick was recently promoted to distinguished professor in the department of statistics at Texas A&M University. Mallick is a pioneer researcher in the field of Bayesian nonparametric regression and classification and the author of *Bayesian Methods of Nonlinear Classification and Regression*. His many strengths include his ability to do major collaborative research with scientists from fields other than his own, such as petroleum engineering, bioinformatics, traffic mapping superfund hazardous waste sites, and industrial engineering. He often develops novel methodology and theory that is essential for sound scientific research in these collaborations and currently has seven funded research grants.

Mallick has been an invited speaker at more than 50 conferences and has advised 24 PhD students. He has been selected for many honors and awards, including Fellow of the American Statistical Association, Institute of Mathematical Statistics, and Royal Statistical Society. He is an elected member of the International Statistical Institute, and he won the Outstanding Young Researcher Award from the Indian Statistical Association in 2007. ■

Thomas L. Mesenbourg Jr., the deputy director of the U.S. Census Bureau, has been selected to receive the 2011 Julius Shiskin Memorial Award for Economic Statistics. This award recognizes unusually original and important contributions in the development of economic statistics or in the use of statistics interpreting the economy. The award recognizes Mesenbourg for his contributions to developing and advancing economic statistics programs that meet the needs of a rapidly changing economy. He is the 38th recipient of the award and will be honored at events hosted by the three sponsors of the award: Washington Statistical Society, National Association for Business Economics, and Business and Economics Section of the American Statistical Association.

Prior to his appointment as deputy director of the U.S. Census Bureau in 2008, Mesenbourg served as associate director for economic programs (2005 to 2008) and in other executive positions in the Census Bureau's Economic Directorate. Most recently, he played a critical role in the successful completion of the 2010 Decennial Census. In 2004, Mesenbourg was the recipient of a Presidential Rank Award for Distinguished Senior Executives, the government's highest award for career executives.

Mesenbourg's major contributions to economic statistics have been meeting the needs of a rapidly changing economy and include expanding coverage of services, introducing innovative classification systems of economic activity, and providing new data on the impact of technology. He developed and implemented these programs by working with other federal statistical agencies, in particular the Bureau of Labor Statistics (BLS) and Bureau of Economic Analysis (BEA), thus improving the consistency, coverage, and accuracy of the data compiled by the Census Bureau and these agencies.

Expanding coverage of services

As the services sector was playing an increasingly important role in the economy, Mesenbourg successfully led efforts to expand coverage and improve timeliness of data on the sector. He directed the implementation of a major expansion of the coverage of service industries in the 1987 Economic Census and further expansions in subsequent censuses, including a major expansion of the collection of product detail. To improve timeliness of the data on services, he carried the expansion of service industries from economic census years into the Services Annual Survey, completing this effort in 2008. He established the Quarterly Services Survey in 2004 and, in 2005, expanded coverage of the Annual Wholesale Trade Survey to include manufacturers' sales branches and offices. Mesenbourg's work on the new quarterly survey, which provided estimates of service industry output for almost 20% of the economy, and the additional data on wholesale trade provided critical source data for the estimates of GDP prepared by BEA.

Mesenbourg

Introducing innovative classification systems of the industrial activities

Mesenbourg played a pivotal role in the interagency development and implementation of the landmark North American Industry Classification System (NAICS). He began his involvement with NAICS by planning and organizing the 1991 International Conference on Classification in Williamsburg,

Read about your colleagues and friends in the news. Go to *www.amstat.org* and click on "Statisticians in the News."

Obituary

Howard B. Christensen

Howard B. Christensen passed away May 4, 2011. He was 82 years old.

An accomplished statistical engineer and software developer, Christensen worked in quality improvement and assurance with companies that included Owens Corning, Nestle, Anaconda Wire & Cable, Becton Dickinson, and John Deere. Christensen owned his own consulting company, Productivity Enhancements, and was a long-standing member of the American Statistical Association and American Society for Quality.

Christensen's complete obituary can be viewed at *www.recordonline.com/apps/pbcs.dll/article?AID=/20110506/NEWS0301/305069997/-1/SITEMAP*.

Virginia, which laid the groundwork for NAICS. Then, during the implementation, maintenance, and revision phases of NAICS, he served as the Census Bureau representative on the interagency Economic Classification Policy Committee. His main contribution to NAICS was his strong leadership of the Census Bureau to incorporate the new system into its statistical programs, beginning with the 1997 Economic Census and subsequent annual and monthly surveys. Mesenbourg continued his role in improving classification systems through his efforts to develop a companion product classification system—the North American Product Classification System.

Providing new data on the impact of technology

Mesenbourg also developed and implemented a number of new data collections at the Census Bureau that provided critical information on the impact of changes in technology. He took the lead in putting the federal government into the business of measuring electronic commerce when, in 1999, the Census Bureau began to collect quarterly data of retail e-commerce sales, followed in 2002 by annual estimates of e-commerce activity for manufacturing, wholesalers, selected service industries, and retail trade. These data showed that the levels published previously by private analysts had been grossly overstated.

Mesenbourg also served on an interagency committee to look at the gap in data on business expenditures for information and communication technology equipment and computer software. As a result, in 2004, the Census Bureau began the annual Information and Communications Technology Survey (ICTS) to collect data on noncapitalized and capitalized spending for these expenditures. Data from this survey assist BEA in constructing the investment component of GDP and the Federal Reserve Board and the BLS in studying the implications on technology for growth and productivity. Most recently, Mesenbourg facilitated the efforts of the National Science Foundation to develop a new survey of innovation.

These improvements not only demonstrate his leadership in developing new programs, but also his effectiveness in obtaining the resources to develop new information. Working with other federal statistical agencies, the Department of Commerce, the Office of Management and Budget, and Congress, he showed an exceptional ability to navigate the budget process with great success. In addition to obtaining funding for the improvements described above, he also has supported other Census Bureau programs such as the innovative Local Employment Dynamics (LED) program and its Quarterly Workforce Indicator reports. Through his recent efforts, this program not only has received the necessary funding, but also established the LED as an ongoing bureau program. ■

Rubin

Donald B. Rubin, John L. Loeb Professor of Statistics at Harvard University, was recently awarded an honorary doctorate by the faculty of social sciences and economics at Otto-Friedrich-Universität Bamberg, Germany, in recognition of his work in the social sciences and economics, particularly his outstanding contributions to the field of applied statistics. The award ceremony took place on May 31. ■

2011 Plenary Awards

You are invited to attend the

ASA Presidential Address and Awards Session

for the recognition of the ASA's

most distinguished members.

Edward C. Bryant Scholarship

Gertrude M. Cox Scholarship

Gottfried E. Noether Awards

W. J. Youden Award in Interlaboratory Testing

Samuel S. Wilks Memorial Award

Tuesday, August 2, 2011, 8 p.m.

Miami Beach Convention Center, Ballroom D2

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Noether Awards

Noether

Nominations are being accepted for the 2012 Noether Senior and Noether Young Scholar awards. Visit *www.amstat.org/careers/gottfriednoetherawards.cfm* for more information and a nomination form. If you have questions, contact the committee chair, Pranab K. Sen, at *pksen@bios.unc.edu* or (919) 966-7274. Nominations should be sent before December 1, 2011, to Pam Craven in the ASA office at *pamela@amstat.org* or 732 N. Washington St., Alexandria, VA 22314, ATTN: Award Nominations.

Deming Lecture

Deming

The Deming Lectureship Committee is accepting nominations for the 2012 Deming lecturer. Visit *www.amstat.org/careers/demingleclureraward.cfm* for more information and a nomination form. If you have questions, contact the committee chair, A. Blanton Godfrey, at *abgodfre@ncsu.edu* or (919) 515-6500. Nominations should be sent before November 15, 2011, to Pam Craven in the ASA office at *pamela@amstat.org* or 732 N. Washington St., Alexandria, VA 22314, ATTN: Award Nominations. ■

sectionnews

Biometrics

Edited by Songthip Ounpraseuth, Section Publications Officer

During this year's JSM in Miami Beach, Florida, the Biometrics Section will honor five travel award winners in addition to the winner of the David P. Byar Young Investigator Award.

This year's award winners are the following:

- Genevera Allen, Rice University, for "A Generalized Least Squares Matrix Decomposition"
- Qunhua Li, University of California at Berkeley, for "Measuring Reproducibility of High-Throughput Experiments"
- Jessica Minnier, Harvard University, for "Risk Classification with an Adaptive Naïve Bayes Kernel Machine Model"
- Layla Parast, Harvard University, for "Landmark Prediction of Long-Term Survival Incorporating Short-Term Event Time Information"
- Sihai Dave Zhao, Harvard University, for "Grouped Variable Selection via Hierarchical Models"

To view section news in its entirety, visit *http://magazine.amstat.org.*

Each winner receives $800 to offset the cost of traveling to JSM to present their paper, as well as a certificate and plaque commemorating their award.

The David P. Byar Young Investigator Award is given annually to a new researcher in the Biometrics Section who presents an original manuscript at the Joint Statistical Meetings. This year, Daniela Witten of the University of Washington will receive a $1,500 award for "Penalized Classification Using Fisher's Linear Discriminant."

All winners will be presented with their awards at the section mixer and business meeting during JSM in Miami Beach, Florida, on August 1 from 5:30 p.m. to 7:00 p.m. The mixer is open to all JSM attendees.

In addition to the mixer, the Biometrics Section is sponsoring two continuing education courses and six invited sessions during JSM. Check the online program at *www.amstat.org/meetings/jsm/2011* for locations and times.

It's time to start thinking about invited sessions for next year's Joint Statistical Meetings, which will be held July 28–August 2 in San Diego, California. Anyone interested in organizing an invited session or who has ideas for one should contact the section's 2012 program chair, Timothy D. Johnson, at *tdjtdj@umich.edu*.

Also, ideas for short courses should be forwarded to the section's continuing education chair, Annie Qu, at *anniequ@illinois.edu*.

For details, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*.

Government Statistics

Gearing up for JSM 2011 in Miami Beach, Florida, the Government Statistics Section recruited Jeff Geuder, director of the United States Department of Agriculture (USDA) and the National Agricultural Statistics Service (NASS) to showcase the citrus production in Florida and how it is forecasted.

During the last decade, nearly three quarters of all United States citrus was grown in Florida. The relative size of the Florida citrus crop demands that statistically accurate forecasts be made starting in October of each year and continuing throughout the marketing year. To provide these statistically accurate forecasts, NASS has developed a survey program based on objective counts and measurements (rather than subjective reporting from individual producers).

To read "Forecasting Citrus Production in Florida," visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*.

Health Policy Statistics

The Health Policy Statistics Section (HPSS) is pleased to announce its program for the 2011 Joint Statistical Meetings in Miami Beach, Florida. We have a packed program covering a range of topics in health policy research and applications. This year, HPSS is the primary sponsor for one short course, four invited sessions, five topic-contributed sessions, and six contributed sessions.

HPSS will present its usual Wednesday speaker luncheon, this year by Rod Little, who will give a talk titled "Calibrated Bayes, Models, and the Role of Randomization in Surveys and Experiments." Additionally, HPSS is sponsoring several A.M. and P.M. roundtable discussions. These are a great opportunity to learn about new topics while meeting others with similar interests. Be sure to register for the speaker luncheon or roundtables before the meeting or soon after arrival; tickets must be purchased at least 24 hours before the event, and roundtables often sell out.

For details, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*. To register for JSM 2011 or view the online program, visit *www.amstat.org/meetings/jsm/2011/index.cfm*.

Risk Analysis

At this year's JSM in Miami Beach, Florida, the Section on Risk Analysis is sponsoring numerous events and invites you to participate in them. The section's annual joint mixer with the Section on Statistics in Defense and National Security is August 1, from 6–8 p.m. This will be a festive event, in which colleagues and friends have a chance to mingle and discover the most recent happenings within both sections. At the mixer, the section will recognize its two student/young researcher award winners.

In addition to the joint mixer, the section will sponsor two invited sessions, two topic-contributed sessions, and three contributed sessions. To view the list of sponsored events, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*. For detailed information, refer to the JSM 2011 online program at *www.amstat.org/meetings/jsm/2011/index.cfm*.

Social Statistics

Nancy Clusen, Section Program Chair

Each year, the Social Statistics Section cosponsors a student paper competition with the Government Statistics Section and Survey Research Methods Section. The overall quality of submissions this year was excellent, and we found ourselves having to decide between papers that were extremely close in terms of quality. This year's winners are the following:

- Brady Thomas West, University of Michigan, "Bayesian Analysis of Between-Group Differences in Variance Components in Hierarchical Generalized Linear Models"
- Qi Dong, University of Michigan, "Combining Information from Multiple Complex Surveys"
- Dan Liao, RTI International, "Variance Inflation Factors in the Analysis of Complex Survey Data"
- Joseph Sakshaug, University of Michigan, "Synthetic Data Generation for Small-Area Estimation in the American Community Survey"
- Anna Sikov, Hebrew University of Jerusalem, "Imputation and Estimation Under Nonignorable Nonresponse for Household Surveys with Missing Covariate Information"

The authors will present their papers at JSM in Miami Beach, Florida, and be recognized at the sections' business meetings. A subsidy of up to $800 was provided to each winner to cover JSM 2011 expenses.

To view the details of each award-winning paper, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections.* For detailed information about JSM 2011, visit the online program at *www.amstat.org/meetings/jsm/2011/index.cfm*.

Statistics and the Environment

ENVR members are reminded to stop by the ENVR mixer during JSM 2011 on August 1 from 6:00 p.m. to 7:30 p.m. in Room C224 of the convention center. There will be food, a cash bar, fun people, and awards.

Survey Research Methods

John Finamore, Section Publications Officer

As stated in the charter for the Survey Research Methods Section (SRMS), the annual business meeting shall be held in connection with the annual meeting of the American Statistical Association. The annual business meeting is open to all SRMS members and interested parties.

This year's SRMS annual business meeting will be held in Miami Beach, Florida, at 6 p.m. on August 3 in Room C224 of the Miami Beach Convention Center.

To read the agenda for the meeting, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*. If you have any questions about the SRMS annual business meeting, contact the SRMS chair, Steve Cohen, at *asa.srms@gmail.com*.

chapternews

Southern California

April was a busy month for the Southern California Chapter. On April 9, the chapter held its 30th Annual Workshop in Applied Statistics at California State University, Long Beach. The event featured Alex Dmitrienko, a research advisor to Eli Lilly and Company, who gave a talk titled "Key Multiplicity Issues in Clinical Trials."

The workshop reviewed key multiplicity issues arising in clinical trials—including analysis of trials with multiple endpoints, dose-control comparisons, and subgroups—and presented traditional multiplicity adjustment methods as well as recent advances in this area. It also discussed regulatory considerations and software implementation of multiplicity adjustment methods using SAS and R software. More than 50 attendees participated from industry, government, and academia. Representatives from SAS and Chapman & Hall/CRC also were present.

The chapter held its annual Careers Day in Statistics at City of Hope National Medical Center in

Duarte, California, on April 23. The event featured panel sessions in the morning with nine panelists from industry, government, nonprofit organizations, and academia, who discussed the career opportunities, challenges, and requirements in their respective fields. This was followed by a career fair in the afternoon, during which exhibitors chatted with meeting participants and discussed, among other things, job openings at their organizations, what their organizations do, and what they do. More than 70 undergraduate and graduate students from universities across Southern California attended.

committeenews

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

Professional Ethics

Shelley Hurwitz, Committee Chair

This summer at JSM, ethics sessions will take place daily. In Monday's session, "Real-Life Ethical Dilemmas Encountered in the Practice of Statistics: They Happen Everywhere," Arlene Ash will present her personal dilemma related to Bush-Gore; Katherine Halvorsen will discuss an undergraduate dilemma that will ring true for many teachers; Jeff Witmer will discuss dilemmas in publishing, contracts, and preserving your rights; and Don Bentley will highlight isolated statistician dilemmas.

Tuesday's panel is titled "New World of Data on Human Beings: Challenges and Solutions to Promoting Research While Ensuring Confidentiality." The deluge of new data types from advances in cyberinfrastructure and computational capacity will be discussed.

Wednesday's panel, "Improving the Ethical Guidelines," is chaired by 2009 ASA President Sally Morton and will include John Gardenier, Peter Imrey, Doug Samuelson, and Ron Wasserstein. Our current ethical guidelines are from 1999. The statistics profession has evolved, and it may be time for a revision. We need your suggestions. Even if you think the current version should not be tinkered with, we want to hear from you.

On Thursday, we are cosponsoring "Safety and Informed Consent in Human Rights Field Research: Challenges, Experiences and Lessons Learned."

For details, visit *http://magazine.amstat.org/blog/category/membernews/amstatsections*.

Scientific and Public Affairs Advisory

Clyde Tucker, Committee Chair

The ASA Scientific and Public Affairs Advisory Committee (SPA) has been involved in a number of important policy initiatives that have relevance for ASA members. One of these is the organization of the new Federal Office of Financial Research created by the Financial Reform Act. This new office will need the advice of statisticians with respect to the creation of research databases and methods of analysis. Steve Pierson, ASA director of science policy and a liaison to SPA, has held meetings with congressional staff to foster legislation for improving statistics education throughout the United States.

The committee also has devoted attention to auditing elections. Recently, members of SPA worked on drafting a letter to the Massachusetts State Legislature providing recommendations on valid statistical methods for conducting election audits.

The committee is also sponsoring a number of invited and topic-contributed sessions at JSM, including its own invited panel, "The Implications of Statistical Measurement on Public Policy," to be held at 8:30 a.m. on August 3 in Room A209 of the convention center.

For details, visit *http://magazine.amstat.org/?cat=442*.

Survey Review

The ASA Survey Review Committee (SRC) reviews and approves surveys of the ASA membership and surveys sponsored by ASA sections and committees. The SRC is charged with maintaining methodological standards, minimizing respondent burden, and ensuring proposed surveys achieve their intended goals. Any survey that the ASA Board, sections, or committees sponsor must be sent through the ASA Survey Review Committee for a review.

To assist ASA sections and committees that are planning surveys, the SRC will hold an open meeting during JSM 2011 on August 3 from 7:00 a.m. to 8:30 a.m. in the Lucina room of the Loews Miami Beach Hotel. Members and representatives of ASA sections and committees currently developing a survey or considering one in the future are encouraged to attend.

During the meeting, SRC members will be available to discuss all aspects of the survey process, including sample selection methods, questionnaire design, survey implementation plans, and data processing and analysis. Representatives should bring any helpful information, such as a current draft or a past survey and an implementation and sample selection plan. Contact the committee chair, Trent Buskirk, at *tbuskirk@slu.edu* with any questions. ■

2011

August

7–10—Practical Genomics: From Biology to Biostatistics, Baltimore, Maryland
For more information, visit *pevsnerlab.kennedykrieger.org/workshop/index.html* or contact Lauren Ciotti, 550 N. Broadway, Suite 1100, Baltimore, MD 21205; (410) 614-2166; *genomics@jhu.edu*.

September

***19–21—2011 FDA/Industry Statistics Workshop, Washington, DC**
For more information, visit *www.amstat.org/meetings/fdaworkshop* or contact Cheryl Behrens, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; *cheryl@amstat.org*.

October

13–14—Operations Research Society of Eastern Africa 2011 Conference, Nairobi, Kenya
For details, visit *www.orsea.net* or contact Gituro Wainaina, Kenya's Vision 2030 Delivery Secretariat, Nairobi, International, Kenya; *wainainagituro@vision2030.go.ke*.

20–21—Emerging Methodological Issues in Population-Based Chronic Disease Research, Seattle, Washington
For more information, visit *www.prenticesymposium.org* or contact Noelle Noble, 1100 Fairview Ave. North, M2-B500, Seattle, WA 98109; (206) 667-4147; *nnoble@fhcrc.org*.

31–11/4—53rd Annual Conference of the South African Statistical Association, Pretoria, South Africa
For information, visit *www.sastat.org.za* or contact Sonali Das, Buildign 2A, CSIR, P.O. Box 395, Pretoria, International 0001, South Africa; 0027128413713; *sdas@csir.co.za*.

December

12–16—AIM Workshop: Singular Learning Theory, Connecting Algebraic Geometry, and Model Selection in Statistics, Palo Alto, California
For details, visit *www.aimath.org/ARCC/workshops/modelselection.html* or contact Estelle Basor, 360 Portage Ave., Palo Alto, CA 94306; (650) 845-2072; *ebasor@aimath.org*.

2012

March

14–16—IAENG International Conference on Data Mining and Applications 2012, Hong Kong, China
For details, visit *www.iaeng.org/IMECS2012/ICDMA2012.html* or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK, Hong Kong; (852) 3169-3427; *imecs@iaeng.org*.

June

6–9—MedicReS World Congress on Good Medical Research, Vienna, Austria
For more information, visit *www.ic2012.medicres.org* or contact Burcin Akicier, Armada Is Merkezi Kat 12 Sogutozu, Ankara, International 06100, Turkey; +905072072777; *info@bsb.com.tr*. ■

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

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

To view the entire list of statistics meetings and workshops, visit *www.amstat.org/dateline*.

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Florida

■ University of South Florida College of Medicine, and the Pediatrics Epidemiology Center (PEC) is seeking applicants for asst/assoc/full professor in biostatistics. Send letter of application, curriculum vitae, statement of planned research projects, 3 letters of reference, as PDF files to *Tricia.Holtje@epi.usf.edu.* The University of South Florida is an EO/EA/AA employer. For disability accommodations, contact Tricia Holtje at (813) 396-9507 min. five working days in advance.

Oklahoma

■ Tenure-track assistant professor position (in exceptional cases associate professor may be offered) beginning January 2012. PhD in statistics, demonstrated excellence in teaching and research or evident potential. Review of applications begins 10/31/2011 and continues until position is filled. Send letter, CV, transcripts, and arrange to have three recommendation letters to Chair, Search and Hiring Committee, Statistics Dept., Oklahoma State University, Stillwater, OK 74078-1055. Visit *http://statistics.okstate.edu.* Oklahoma State University is an AA/EEO/E-Verify employer committed to diversity.

Washington

■ Call for applications at the Institute for Heath Metrics and Evaluation, University of Washington, for postgraduate fellows. Enhance skills in conducting in-depth, methodological research on global health topics with mentoring from leading faculty and researchers. Advance knowledge of quantitative analytical methodologies and their application to global health. Prepare for future positions in academia, health agencies, international organizations, and foundations. To learn more, visit: *www.healthmetricsandevaluation.org.* University of Washington is an AA/EOE.

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.*

www.westat.com

EOE

Survey Sampling Statistician

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
Job Code DRM/3233BR

Position available for a survey sampling statistician with 3 or more years of relevant experience. Responsibilities include sample design and selection, power calculations, frames development, weighting including nonresponse adjustment and benchmarking, imputation, and variance estimation. Must have a master's or doctoral degree in statistics and have very good writing skills. 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/jobs** and enter **3233BR** in the space provided.

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CANADA

Ontario

■ Chair of statistics and actuarial science. Statistics/actuarial science-tenured associate or full professorship, depending on qualifications. PhD in statistics or actuarial science, a strong track record in research, demonstrated success in graduate student supervision, and evidence of effective leadership. Submit CV to Ian Goulden, Dean, Faculty of Mathematics, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada. Closing Date: 10/31/2011, with possible interviews and appointment prior to closing date. University of Waterloo is an AA/EOE. ■

EMORY

FACULTY POSITIONS AVAILABLE
BIOSTATISTICS and BIOINFORMATICS Core
WINSHIP CANCER INSTITUTE
EMORY UNIVERSITY

The Winship Cancer Institute (WCI) of Emory University Biostatistics and Bioinformatics core (a shared resource) is seeking to fill multiple faculty openings at the levels of associate and assistant professor in the research track. We are recruiting for faculty in all areas, including clinical trials, Bayesian modeling, biomarker study design and analysis, omics areas, and health outcomes research. We especially welcome applications from candidates with cancer research experience. Responsibilities include collaboration and consultation with Winship investigators, assistance in grant preparation, clinical trial design, data analysis and preparing abstracts and manuscripts. Academic appointments will reside in the Department of Biostatistics and Bioinformatics at the Rollins School of Public Health (RSPH).

As Georgia's first and only National Cancer Institute Designated Cancer Center, WCI coordinates a vast array of resources in medical, surgical, radiation oncology, diagnostic imaging, and the subspecialties of cancer care. WCI is a partner in the Georgia Cancer Coalition, an innovative public/private initiative bringing together Georgia's leading hospitals, universities, biotech firms, civic groups, non-profit and government agencies to treat, prevent and save lives from cancer. This partnership extends the benefits of NCI Cancer Center Designation through initiatives such as the Georgia Center for Oncology Research and Education. Emory was named among the top 50 cancer centers in the United States by *U.S. News and World Report* and received the Blue Cross Blue Shield Designation for Treatment of Rare and Complex Cancers.

WCI Biostatistics and Bioinformatics core has 4 full time doctoral faculty and 2 masters level members in Biostatistics, with active recruitments for MS level bioinformatics positions. Core staff collaborate with members of the Atlanta Clinical and Translational Research Institute, WCI cancer genomics core, the clinical trials core, the School of Medicine Biomolecular Computing Resource, and Emory University Center for Comprehensive Informatics. Additional opportunities for collaboration with faculty from the RSPH and School of Medicine exist within WCI scientific programs: Drug Discovery and Developmental Therapeutics, Cancer Genetics and Epigenetics, Cancer Cell Biology, and Cancer Prevention and Control.

Requirements. Doctoral degree in biostatistics/statistics or a related field; strong record of scientific collaborative research; excellent oral and written communication skills; and at least two years of research experience. Candidates for associate professor should have an established record of collaborative research.

Salary and rank commensurate with experience. A letter summarizing experience, a statement of research interests, a complete curriculum vitae, and three reference letters should be sent to:

Faculty Search Committee, c/o Mary Abosi (mabosi@emory.edu)
Emory University, Department of Biostatistics and Bioinformatics, 1518 Clifton Rd., NE, Atlanta, GA 30322
http://www.sph.emory.edu/hpbios.html

Consideration of applications will begin immediately, and applications will be considered until positions are filled. The Rollins School of Public Health of Emory University is an equal opportunity/affirmative action employer. The department has a culturally diverse faculty and strongly encourages applications from women and minority candidates.

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Engage your fellow statisticians and enhance your mind, education, and career at ***www.amstat.org***.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
UNITED STATES FOOD AND DRUG ADMINISTRATION
OFFICE DIRECTOR
WASHINGTON, DC METRO AREA

The Food and Drug Administration (FDA) is seeking an Office Director for the Office of Biostatistics (OB), located in the Office of Translational Sciences, Center for Drug Evaluation and Research (CDER), FDA. Working at the FDA, you can make a difference in the lives of every American, helping to make their world healthier, safer and better. This position represents an excellent career opportunity to work in a visible, high priority program area that has the potential to alter in a substantive way the direction of drug development at the national level.

As the Office Director, the incumbent will be responsible for leading innovation in drug development and regulatory change through leading CDER in the utilization of quantitative methodologies throughout the drug lifecycle.

In this role the incumbent will manage the biostatistical programs of the Center. Establish and coordinate policy and program objectives of the Office, with the overall program objectives of the Center, the Agency, the Department and other Government agencies.

The incumbent reports to the Office Director of the Office of Translational Sciences and is a member of the CDER Senior Management Team. The Office of Biostatistics is comprised of more than 170 employees supporting the medical components of CDER: Cardiovascular/Renal, Neurology, Psychiatry, Anesthesia/Analgesia, Metabolism/Endocrinology, Pulmonary, Gastroenterology, Dermatology/Dental, Reproductive/Urological, Anti-Infective, Ophthalmology, Anti-Virals, Special Pathogens, Oncology, Imaging/Coagulation, Generics Drug, Pharmacology/Toxicology, and Chemistry.

The incumbent should have:

- Knowledge of the drug development process
- A history of leading innovative change
- An understanding of the role of quantitative sciences throughout the drug lifecycle
- Ability to build consensus within a complex organization
- Experience developing clear processes and metrics for assessing progress
- Ability to coordinate medical and biometric research and operating programs to collect and evaluate information on drug usage, adverse reactions, poisonings, safety, quality, efficacy, and socioeconomic implications of drugs
- Ability to review and evaluate research and developmental results, research needs, and regulatory requirements, on a continuing basis for program adjustments to meet Center needs and priorities
- Ability to coordinate biometric programs with the regulatory programs of the agency
- Ability to direct/supervise a budgeted staff of approximately 170 employees, including scientific, professional, technical, administrative, and clerical support personnel assigned to the Divisions, ranging in levels from senior executive to entry levels
- Ability to serve as an expert advisor in his/her specialty during the initiation and formulation of regulatory programs and regulations
- Ability to provide expert consultation and advice on epidemiology and biometrics to other Centers in FDA, to other Government agencies, and to international organizations
- Ability to represent the Commissioner and Center Director at conferences with industry representatives
- Ability to testify as an expert witness at Congressional hearings and in judicial proceedings
- Ability to review Division requests for funds and personnel

GENERAL INFORMATION: Positions being filled as Title 42, 209(f) or U.S. Commissioned Corps require U.S. citizenship. Candidates for this position must be U.S. citizens. Salary range or other relevant subspecialties: Title 42, 209(f) appointment, $123,758 to $220,999 per annum. Relocation costs will be paid.

Basic Requirements: Degree: Ph. D in statistics or epidemiology from a school in the United States or Canada approved by a recognized accrediting body in the year of the applicant's graduation. [A Doctor of Medicine or equivalent degree from a foreign medical school that provided education and medical knowledge substantially equivalent to accredited schools in the United States may be demonstrated by permanent certification by the Educational Commission for Foreign Medical Graduates (ECFMG) (or a fifth pathway certificate for Americans who completed premedical education in the United States and graduate education in a foreign country).]

How to Apply: Submit electronic curriculum vitae via e-mail no later than July 24, 2011 to Lisa.Gilmer@fda.hhs.gov. Please include a cover letter indicating that you are applying for the position of the Office Director for the Office of Biostatistics.

ALL APPLICATIONS WILL RECEIVE EQUAL CONSIDERATION WITHOUT REGARD TO RACE, ORIGIN, COLOR, RELIGION, SEX, DISABILITY, OR ANY OTHER NON-MERIT FACTOR. FDA IS AN EQUAL OPPORTUNITY EMPLOYER AND HAS A SMOKE FREE ENVIRONMENT.

Contacts

Main

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Alexandria, VA 22314-1943
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Toll-free: (888) 231-3473
Fax: (703) 684-2037
Email: *asainfo@amstat.org*

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General Information

Information about any of the following may be found by visiting the websites listed below or contacting Member Services.

Accreditation

The ASA's accreditation program is a portfolio-based, rather than an examination-based, credential that is renewable every five years. Accreditation is also voluntary; applicants seek accreditation because they believe the credential is worthwhile to them. For more information, visit *www.amstat.org/accreditation.*

Amstat Online

Access up-to-date information at *www.amstat.org.* Updated often, the ASA's website gives you access to recent news; the ASA's products and services; and section, chapter, and committee home pages.

ASA Membership

ASA members receive *Amstat News*, enjoy a variety of discounts, build an invaluable network of more than 18,000 members, and expand their career horizons. To join, go to *www.amstat.org/join.*

Member Services

Do you have an address change, membership question, claim, or general inquiry? Please call the ASA Member Service's toll-free direct line, (888) 231-3473, for all your ASA needs. If you prefer, email Member Services at *asainfo@amstat.org* or fax to (703) 684-2037.

Campaigns for the ASA

Giving to the ASA

Members and friends of the ASA may contribute to the statistics profession by financially supporting our mission and goals. The ASA is a 501(c) (3) not-for-profit corporation. Contributions to the ASA are tax deductible. Please visit *www.amstat.org/giving* for more information.

Host a Membership Social

Host a membership social and the ASA will reimburse up to $100 for the cost of pizza, sandwiches, snacks, and soft drinks. Visit *www.amstat.org/membership/pdfs/ChapterSchoolSocials.pdf* to participate.

Member Demographics

The ASA collects demographics data to create summary reports of the ASA membership and develop services. All individual demographic information remains confidential. Visit *www.amstat.org/membersonly* and click "My Demographic Profile" under "My Account" to participate.

Member-Get-A-Member

Recruit your colleagues for ASA membership! You depend on the ASA, and we count on you, too. We know our current members are the best possible sources for new members who could benefit from all the ASA has to offer. Visit *www.amstat.org/membership/mgm*.

Sponsor an ASA Membership

Sponsor the membership of a colleague, student, or K–12 school. You also can give ASA membership as a gift! Visit *www.amstat.org/membership/SAM*.

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Students join the ASA at the special rate of $10. Visit *www.amstat.org/join*.

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Chapters are the grass roots of the ASA, which is why we are challenging our chapters to help increase membership with the Chapter-Get-A-Member campaign. Visit *www.amstat.org/membership/cgm*.

Publications & Products

Back Issues

Back issues of ASA publications may be ordered by sending an email to *asainfo@amstat.org*.

Books

- ***Making Sense of Statistical Studies*** provides hands-on investigations to help students design and analyze statistical studies. Visit *www.amstat.org/education/msss*.

- ***The ASA-SIAM Series on Statistics and Applied Probability*** provides works of general interest to statisticians, applied mathematicians, engineers, and scientists. The series is jointly published by the ASA and the Society for Industrial and Applied Mathematics. Visit *www.amstat.org/publications/booksandcds.cfm*.

- ***Teaching Statistics: Resources for Undergraduate Instructors*** is a publication of the ASA and the Mathematical Association of America. For more information, visit *www.amstat.org/publications/booksandcds.cfm*.

- ***Guidelines for Assessment and Instruction in Statistics Education (GAISE) Report: A Pre-K–12 Curriculum Framework*** provides a conceptual framework for K–12 statistics education and a coherent picture of the overall curriculum. For more information, visit *www.amstat.org/education/gaise*.

Brochures

The ASA publishes brochures about topics of interest to professional statisticians and those who want to explore the field of statistics. Many brochures are available at no charge or for a nominal fee. For more information and to order, visit *www.amstat.org/ASAStore/Brochures_C104.cfm*.

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Network with thousands of colleagues through the ASA's regional chapters and special-interest sections. For more information, visit *www.amstat.org/chapters* or *www.amstat.org/sections.*

Current Index to Statistics (CIS)

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Since its founding in 1839, the ASA has depended on the invaluable service of dedicated volunteers, working through committees, to achieve its goals. Visit *www.amstat.org/comm* for information.

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Fellows

Annually, full members of established reputation who have made outstanding contributions to statistics are recognized by selection for Fellow. Visit *www.amstat.org/fellows* for more information.

Grant Program

Six major research programs and one grant program are administered by the ASA. Visit *www.amstat.org/careers/fellowshipsgrants.cfm* or email *farp@amstat.org* for more information.

Joint Statistical Meetings

JSM is the largest annual gathering of statisticians in North America. Sponsored by the ASA, International Biometric Society (ENAR and WNAR), Institute of Mathematical Statistics, Statistical Society of Canada, International Chinese Statistical Association, and International Indian Association, JSM is attended by more than 5,000 people each year. Visit *www.amstat.org/meetings* or email *JSM@amstat.org*.

JSTOR

ASA members can purchase access to the JSTOR database of *JASA, TAS, Technometrics, JBES,* and *JCGS*. JSTOR is a web archive of every issue of these publications, with the exception of the most recent five years. To purchase access, visit *www.amstat.org/publications/pdfs/JSTORSpecialOffer.pdf*.

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Reciprocal Societies

If you reside in a developing country and are a member of one of the ASA's reciprocal societies, you are eligible to receive an additional $5 off your developing country membership dues. Visit *www.amstat.org/membership/devcountries/app/index.cfm?fuseaction=ShowApp* for more information.

Salary Report

An annual report of salaries of academic statisticians is available at *www.amstat.org/careers/salaryinformation.cfm*.

Other Resources

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ASA Calendar of Events

The ASA Calendar of Events is a searchable online database of statistical events throughout the world. Visit *www.amstat.org/dateline*.

Editorial Calendar

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Mailing Lists

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STAT*tr@k* is a website geared toward people who are in a statistics program, recently graduated from a statistics program, or recently entered the job world. To view, go to *http://stattrak.amstat.org*.

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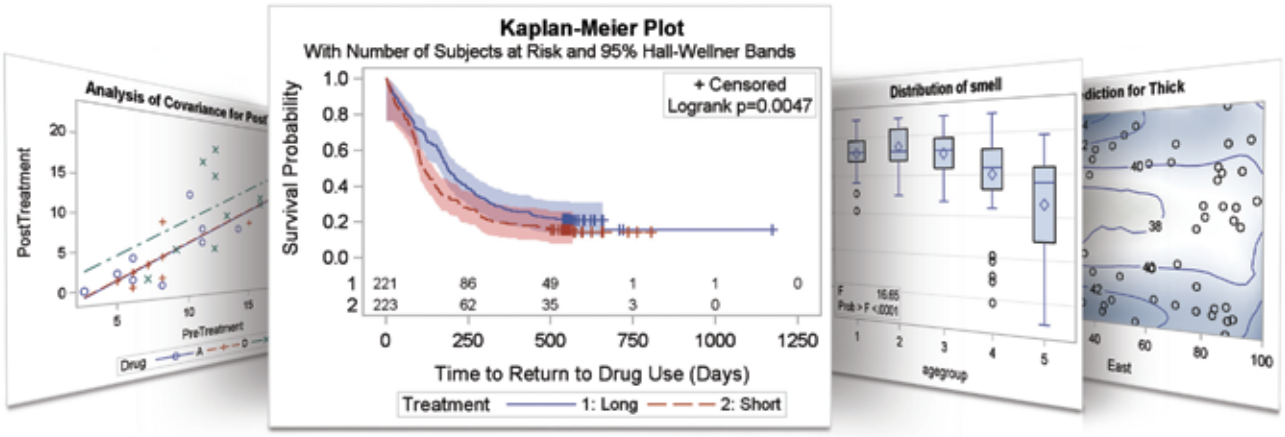

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