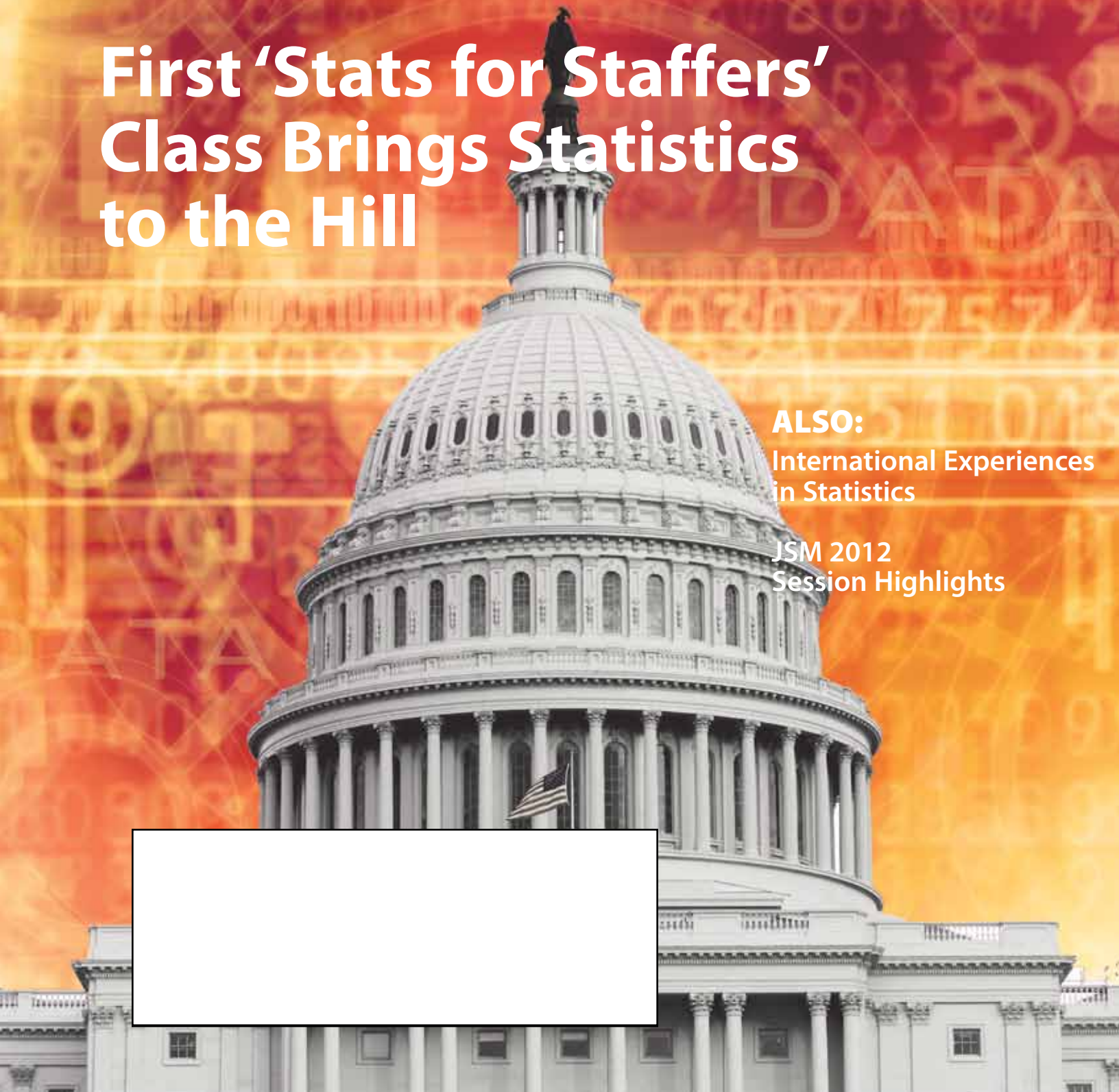
June 2012 • Issue #420

AMSTATNEWS

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

First 'Stats for Staffers' Class Brings Statistics to the Hill



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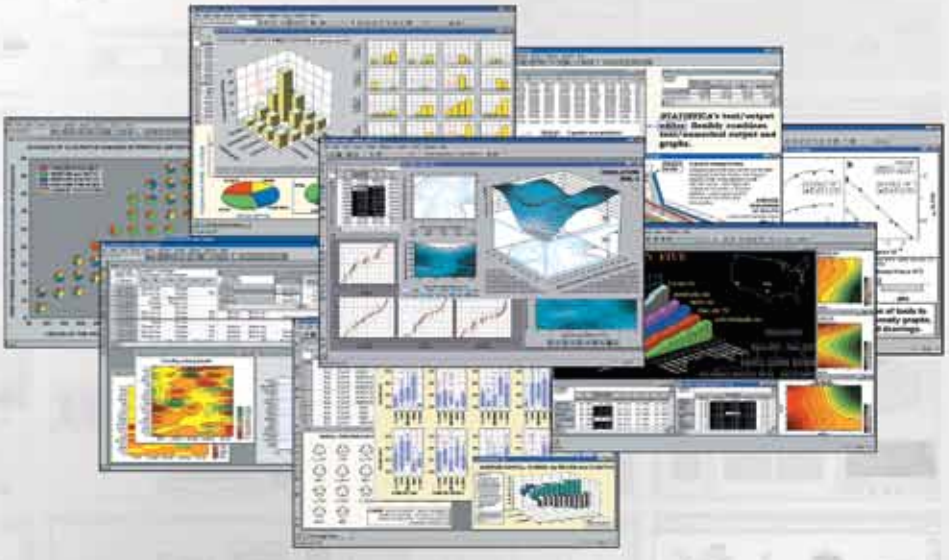

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AMSTATNEWS
JUNE 2012 • ISSUE #420

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

Amstat News (ISSN 0163-9617) is published monthly by the American Statistical Association, 732 North Washington Street, Alexandria VA 22314-1943 USA. **Periodicals postage paid** at Alexandria, Virginia, and additional mailing offices. POSTMASTER: Send address changes to *Amstat News,* 732 North Washington Street, Alexandria VA 22314-1943 USA. Send Canadian address changes to APC, PO Box 503, RPO West Beaver Creek, Rich Hill, ON L4B 4R6. Annual subscriptions are $50 per year for nonmembers. *Amstat News* is the member publication of the ASA. For annual membership rates, see *www.amstat.org/join* or contact ASA Member Services at (888) 231-3473.

American Statistical Association
732 North Washington Street
Alexandria, VA 22314–1943 USA
(703) 684–1221 • FAX: (703) 684-2037

ASA GENERAL: *asainfo@amstat.org*

ADDRESS CHANGES: *addresschange@amstat.org*

AMSTAT EDITORIAL: *amstat@amstat.org*

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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

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

Contributing Editor

Vance

Eric Vance graduated from the University of California at Berkeley with a triple major in math, economics, and statistics. In 2008, he earned his PhD in statistical science from Duke University and, since then, has been an assistant research professor at Virginia Tech and the director of Virginia Tech's Laboratory for Interdisciplinary Statistical Analysis, where he leads a team of faculty and statistics students.

This column is written to inform ASA members about what the ASA is doing to promote the inclusion of statistics in policymaking and the funding of statistics research. To suggest science policy topics for the ASA to address, contact ASA Director of Science Policy Steve Pierson at *pierson@amstat.org*.

Contributing Editors

LaPorte

Gerald M. LaPorte is the acting associate director at the National Institute of Justice in the Office of Investigative and Forensic Sciences, where he provides expert analysis and advice on agency-wide programs or issues of national impact relating to forensic science. LaPorte has numerous scientific publications and has presented nearly 100 training seminars, lectures, and workshops in 13 countries.

Fialkoff

David B. Fialkoff is a writer and an associate communications manager at Lockheed Martin, which operates the National Criminal Justice Reference Service. He has a BA in sociology/criminology from the University of Pennsylvania and a JD from The George Washington University Law School.

columns

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

Contributing Editors

Herring

Amy Herring is professor of biostatistics at The University of North Carolina at Chapel Hill and past president of ENAR. She earned her doctorate in biostatistics from Harvard University and is a Fellow of the ASA.

Balakrishnan

Narayanaswamy Balakrishnan is a professor of statistics at McMaster University. He earned his PhD in statistics from the Indian Institute of Technology, Kanpur, India, and is a Fellow of the ASA and Institute of Mathematical Statistics and an elected member of the International Statistical Institute. He is editor of Communications in Statistics, *and his research interests include distribution theory, ordered data analysis, censoring methodology, reliability, and survival analyses.*

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*.

Contributing Editors

Hahn

Gerald (Gerry) Hahn is a retired manager of statistics at the (current) GE Global Research Center, where he worked for 46 years. He is a co-author of four books and many articles, recipient of numerous awards, and Fellow of the ASA and American Society for Quality. He holds a doctorate from Rensselaer Polytechnic Institute.

Doganaksoy

Necip Doganaksoy is a principal technologist at the GE Global Research Center and an adjunct professor at the Union Graduate College School of Management in Schenectady, New York. He is a co-author of two books and a Fellow of the ASA and American Society for Quality. He holds a doctorate from Union College.

departments

member news

Online Articles

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

'America by the Numbers' on C-SPAN's Washington Journal
Each Friday, C-SPAN's "America by the Numbers" segment features information from the U.S. Census Bureau or other agencies in the federal statistical system. The program highlights the trends and allows the public to call in or email their views. For regular updates, follow @AmstatNews on Twitter. More information about previous C-SPAN programs is available at *www.census.gov/newsroom/cspan*.

Make the Most of Your ASA Membership
Visit the ASA Members Only site: *www.amstat.org/membersonly*.

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

Big Data and Better Data

Word cloud created from a dozen recent articles about Big Data. Although statistics is recognized as an important skill, opportunities for the field of statistics are just beginning to unfold.

Big Data is big news. It is the focus of stories in *The New York Times* and the subject of technology blogs, business forums, and economic studies. This column describes how statisticians can prepare for opportunities in Big Data and explains the distinctive value our profession can provide.

What's Different About Big Data?

For years, statisticians have been working with large volumes of data in fields as diverse as astronomy, bioinformatics, and data mining. Big Data is different because it is generated on a massive scale by countless online interactions among people, transactions between people and systems, and sensor-enabled machinery.

Big Data is newsworthy because it promises to answer big questions. The potential of Big Data lies in innovative ways it can be linked, related, and integrated to provide more detailed and personalized information than is possible with data from a single source. These innovations make it possible for banks to introduce individually tailored services, for health care providers to offer personalized medicine, and for public safety departments to anticipate crime in targeted areas.

Big Data also is opening doors for researchers and educators. It was the focus of Mathematics Awareness Month (*www.mathaware.org*), and "Internet scale data" was a topic of Interface 2012 (*www.interfacesymposia.org/Interface2012/Interface2012.html*). The Statistical and Applied Mathematical Sciences Institute has organized a research program, starting in September, on statistical and computational methodology for massive data sets (*www.samsi.info/programs/2012-13-program-statistical-and-computational-methodology-massive-datasets*).

Recently, the Obama administration announced a Big Data research and development initiative, which includes a new solicitation supported by the National Science Foundation (NSF) and National Institutes of Health (*www.nsf.gov/funding/pgm_summ.jsp?pims_id=504767*). NSF also is convening researchers across disciplines to determine how Big Data can transform teaching, and it is encouraging research universities to prepare the next generation of data scientists at all levels.

Are We Data Scientists?

A recurring theme in Big Data stories is the scarcity of "data scientists"—the term used for people who can draw insights from large quantities of data. This shortage was highlighted in an April 26, 2012, *Wall Street Journal* article titled, "Big Data's Big Problem: Little Talent" (*http://online.wsj.com/article/SB10001424052702304723304577365700368073674.html?mod=googlenews_wsj*). The question "What is

Robert Rodriguez

a data scientist?" is still being debated (see the articles with this title at Forbes.com). However, there is consensus that data scientists must be innovative problemsolvers with expertise in statistical modeling and machine learning, specialized programming skills, and a solid grasp of the problem domain. Hilary Mason, chief data scientist at bitly, adds that "data scientists are responsible for effectively communicating the things that they learn. That might be creating visualizations or telling the story of the question, the answer, and the context."

Most of these requirements read like the job description for a statistician, but, at a high level, we should view data science as a blend of statistical, mathematical, and computational sciences.

What Do We Need to Learn?

In addition to collaborating with other disciplines on Big Data problems, statisticians must be prepared for a different hardware and software infrastructure. Three developments are noteworthy for us.

First, the scale of terabyte-sized data requires that they be spread across a cluster or grid of multiple computers. Increasingly, the data are held in distributed data stores that are amenable to massively parallel processing, rather than in traditional relational databases.

Second, it is so time consuming to pull distributed data into a computing environment that it has become necessary for computational work to be distributed with the data. Google solved this problem in the context of indexing the web by introducing the MapReduce model for parallel programming. Apache Hadoop, an open-source implementation of this technology, is now widely used for Big Data applications.

Third, the cost of blade servers used in grid systems is dropping. A blade is simply a computer that shares components such as power and cooling to maximize computational ability and minimize space. Commodity blades are cost effective (around $10,000 each), and a rack of 48 blades can provide 1,152 processors, three terabytes of memory, and 20 terabytes of storage. Hundreds or thousands of blades can be added to accommodate more data.

As grid systems become prevalent in data centers and cloud computing services, many statisticians will see greater volumes of data along with rising expectations for analysis. We will need new techniques for data management and new tools for data analysis and visualization. And because so much data come from sources such as mobile phones, social networking sites, and health records, we will also need ways to acquire and analyze unstructured text data.

How Can Big Data Benefit from Us?

While we have much to learn about the domains and technology of large data, the world of Big Data has much to gain from the contributions of statistical scientists. We share many skills with data scientists, but we should proactively explain what sets us apart and why statistical thinking is critical to the process.

Like other analysts, statisticians look for features in large data—and we also guard against false discovery, bias, and confounding. We build statistical models that explain, predict, and forecast—and we question the assumptions behind our models and qualify the use of our models with measures of uncertainty. We work within the limitations of available data—and we design studies and experiments to produce data with the right information content.

If I had to summarize this in a sound bite, I would say that we extract value from data not only by learning from it, but also by understanding its limitations and improving its quality. Better data matters because simply having Big Data does not guarantee reliable answers for Big Questions.

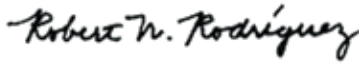
How Should We Respond to Big Data?

Media focus on Big Data could not come at a better time, because the theme for the 2012 Joint Statistical Meetings (*www.amstat.org/meetings/jsm/2012*) is "Statistics: Growing to Serve a Data-Dependent Society." Our presentations should draw attention to statistics as a dynamic discipline that is developing in response to complex, high-dimensional data, as well as new types of data.

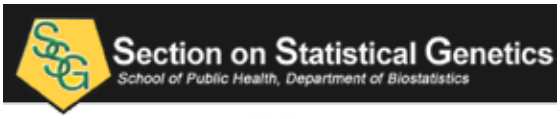
We should also take advantage of the spotlight on Big Data to engage students in introductory statistics courses and attract students to statistical careers. And we should actively pursue the opportunities for research, projects, and work force development being created by the administration's Big Data initiatives.

To keep up with the volume, velocity, and variety of Big Data, we need to stay on top of technological trends and gain new computational skills. This type of training should be offered in our universities and through continuing professional development provided by our association.

The era of Big Data has arrived—and we should think big!



Short Course on Statistical Genetics and Genomics Planned



The University of Alabama at Birmingham's Section on Statistical Genetics will offer the second annual National Institute of General Medical Sciences (NIGMS)–funded short course, "Statistical Genetics and Genomics," from July 9–13.

Focusing on state-of-the-art methodology to analyze complex traits, the five-day course will provide an interactive program to enhance researchers' ability to understand and use statistical genetic methods, as well as implement and interpret sophisticated genetic analyses. Topics will include the following:

- Introduction to genetics and genomics, biostatistics
- GWAS design/analysis/interpretation
- Structural variation and human diseases
- Epigenomics methods
- Microarrays and RNAseq: Technologies and data processing
- Design and analysis of gene expression experiments
- Rare variants and exome sequencing
- Pharmacogenetics/pharmacogenomics
- Whole-genome prediction
- Integrating different data domains
- GWAS pathway-based approaches

There also will be software demonstrations on introductory R and Bioconductor; PLINK, PENNCNV, Epigenetic Analysis; IMPUTE2; ChiP Seq Software (DIME); RMANOVA and HDBSTAT; and Ingenuity Pathways Analysis (IPA).

To ensure the depth and practicality of the training program, the section will provide 10 laptops to students or student pairs in the classroom. Each computer will be loaded with the required statistical software. Participants are encouraged to bring their laptops.

Also, a limited number of travel fellowships are available for participants residing in the United States. For more information, visit *www.soph.uab.edu/ssg/nigmsstatgen/second*. ■

Speakers

Nancy Cox, The University of Chicago

Warren Ewens, University of Pennsylvania

Guilherme Rosa, University of Wisconsin-Madison

Carl Langefeld, Wake Forest University

Suzanne M. Leal, Baylor College

Shili Lin, The Ohio State University

Alison Motsinger-Reif, North Carolina State University

Atul Butte, Stanford University

Mahlet G. Tadesse, Georgetown University

Christine Duarte, University of Alabama

Gustavo de los Campos, University of Alabama

Xiangqin Cui, University of Alabama

Hemant Tiwari, University of Alabama

L. Kelly Vaughan, University of Alabama

Degui Zhi, University of Alabama

STAFF SPOTLIGHT

Kalil Deschamps

Deschamps

Hello, my name is Kalil Deschamps, and I am the ASA's new marketing coordinator. I came on board in January and have since been working diligently on upcoming conferences, the ASA Community, and membership services.

Born a Texan, I relocated to the Washington, DC, area at an early age with my parents and four siblings. After graduating from high school, I chose to attend Hampton University in southern Virginia, where I enjoyed my time as an HU Pirate while I earned my bachelor's degree in marketing.

In my spare time, I love being around family and friends. I enjoy traveling, trying new food, listening to good music, and, of course, indulging in a little retail therapy. I look forward to meeting some of you at this year's JSM and other upcoming events. Please feel free to contact me at *kalil@amstat.org* with any questions. ■

Joseph Ibrahim Named *JASA* Editor

The ASA editorial search committee named Joseph Ibrahim as the next coordinating editor of the *Journal of the American Statistical Association* (*JASA*) and editor of *JASA's* section on Applications and Case Studies. Ibrahim is a professor in the department of biostatistics at The University of North Carolina at Chapel Hill.

"Professor Ibrahim's long record of research accomplishment and editorial experience uniquely qualify him for this prestigious position," said David Banks of Duke University, who chaired the editorial search committee. "He has been a leader in the development of statistical methodology, especially Bayesian techniques, in nearly every aspect of biostatistics, from neuroimaging to longitudinal studies to genomics to missing data. He has provided extensive editorial service to the statistics profession, and we are fortunate he has agreed to accept these *JASA* positions."

As coordinating editor, Ibrahim will work with the editors of *JASA*'s other two sections—Theory and Methods (co-editors Xuming He and Jun Liu) and Reviews (editor Alyson Wilson)—to ensure *JASA* publishes a balanced mix of articles.

Ibrahim previously served as an associate editor for both the *JASA* Applications and Case Studies section and its Theory and Methods section, as well as for *Biometrics*, *Bayesian Analysis*, and other prominent journals. Currently at UNC-Chapel Hill, he is the Alumni Distinguished Professor of Biostatistics and director of the Center for Innovative Clinical Trials.

For more information about *JASA*, visit *www.tandfonline.com/action/aboutThisJournal?show=aimsScope&journalCode=uasa20*. ■

2011 Audit Report for the American Statistical Association

McGladrey & Pullen, LLP

McGladrey

Independent Auditor's Report

To the Board of Directors
American Statistical Association
Alexandria, Virginia

We have audited the accompanying balance sheet of the American Statistical Association (the Association) as of December 31, 2011, and the related statements of activities and cash flows for the year then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audit. The prior year summarized comparative information has been derived from the 2010 financial statements and in our report, dated March 28, 2011, we expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Association's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the 2011 financial statements referred to above present fairly, in all material respects, the financial position of the Association as of December 31, 2011, and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, we have also issued our report dated March 19, 2012, on our consideration of the Association's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

McGladrey & Pullen, LLP

Vienna, Virginia
March 19, 2012

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Member of the RSM International network of independent accounting, tax and consulting firms.

American Statistical Association

Balance Sheet
December 31, 2011
(With Comparative Totals For 2010)

Assets	**2011**	2010
Current Assets		
Cash and cash equivalents	**$ 385,808**	$ 1,132,317
Receivables, net	**318,030**	458,238
Prepaid expenses and other assets	**230,897**	211,322
Total current assets	**934,735**	1,801,877
Investments	**11,032,073**	9,655,556
Equity In Joint Venture	**212,022**	238,702
Bond Issuance Costs	**127,307**	134,158
Property And Equipment, Net	**8,250,595**	8,572,650
	19,621,997	18,601,066
	$ 20,556,732	$ 20,402,943
Liabilities And Net Assets		
Current Liabilities		
Accounts payable and accrued expenses	**$ 506,963**	$ 713,520
Due to joint venture	**430,014**	98,197
Deferred revenue	**3,054,140**	2,561,647
Bonds payable – current	**200,000**	200,000
Total current liabilities	**4,191,117**	3,573,364
Bonds Payable – Less Current Portion	**5,300,000**	5,500,000
Interest Rate Swap Contract	**620,608**	573,450
	10,111,725	9,646,814
Commitments And Contingencies (Notes 11 And 12)		
Net Assets		
Unrestricted		
Undesignated	**8,274,345**	8,608,275
Board designated	**1,235,337**	1,223,734
	9,509,682	9,832,009
Temporarily restricted	**413,069**	435,864
Permanently restricted	**522,256**	488,256
	10,445,007	10,756,129
	$ 20,556,732	$ 20,402,943

See Notes To Financial Statements.

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American Statistical Association

Statement Of Activities
Year Ended December 31, 2011
(With Comparative Totals For 2010)

	2011					
	Unrestricted					
	Undesignated	Board Designated	Temporarily Restricted	Permanently Restricted	Total	2010 Total
Revenue and support:						
Publications	**$ 2,203,513**	**$ -**	**$ -**	**$ -**	**$ 2,203,513**	$ 2,207,632
Meetings	**2,194,943**	**-**	**-**	**-**	**2,194,943**	2,166,341
Membership	**1,849,466**	**-**	**-**	**-**	**1,849,466**	1,714,701
Section income	**77,444**	**587,755**	**-**	**-**	**665,199**	700,366
Grants and awards	**600,933**	**-**	**-**	**-**	**600,933**	602,280
Special projects	**524,881**	**12,521**	**23,182**	**34,000**	**594,584**	584,736
Education	**337,804**	**10,150**	**-**	**-**	**347,954**	459,825
Administration	**43,409**	**-**	**-**	**-**	**43,409**	255,577
Net assets released from restriction	**45,977**	**-**	**(45,977)**	**-**	**-**	-
Total revenue and support	**7,878,370**	**610,426**	**(22,795)**	**34,000**	**8,500,001**	8,691,458
Expenses:						
Program services:						
Meetings	**1,698,411**	**-**	**-**	**-**	**1,698,411**	1,619,695
Publications	**1,493,451**	**-**	**-**	**-**	**1,493,451**	1,523,576
Special projects	**1,292,937**	**13,281**	**-**	**-**	**1,306,218**	1,267,415
Membership	**808,518**	**-**	**-**	**-**	**808,518**	872,693
Education	**763,010**	**8,056**	**-**	**-**	**771,066**	893,350
Section expenses	**84,640**	**577,486**	**-**	**-**	**662,126**	698,952
Grants and awards	**609,734**	**-**	**-**	**-**	**609,734**	567,026
Total program services	**6,750,701**	**598,823**	**-**	**-**	**7,349,524**	7,442,707
Supporting services:						
Management and general	**1,252,642**	**-**	**-**	**-**	**1,252,642**	1,164,250
Total expenses	**8,003,343**	**598,823**	**-**	**-**	**8,602,166**	8,606,957
Change in net assets before unrealized (loss) gain on investments and interest rate swap contract	**(124,973)**	**11,603**	**(22,795)**	**34,000**	**(102,165)**	84,501
Unrealized (loss) gain:						
Unrealized investment (loss) gain	**(161,799)**	**-**	**-**	**-**	**(161,799)**	909,245
Unrealized loss on interest rate swap contract	**(47,158)**	**-**	**-**	**-**	**(47,158)**	(84,478)
Total unrealized (loss) gain	**(208,957)**	**-**	**-**	**-**	**(208,957)**	824,767
Change in net assets	**(333,930)**	**11,603**	**(22,795)**	**34,000**	**(311,122)**	909,268
Net assets:						
Beginning	**8,608,275**	**1,223,734**	**435,864**	**488,256**	**10,756,129**	9,846,861
Ending	**$ 8,274,345**	**$ 1,235,337**	**$ 413,069**	**$ 522,256**	**$ 10,445,007**	$ 10,756,129

See Notes To Financial Statements.

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American Statistical Association

Statement Of Cash Flows
Year Ended December 31, 2011
(With Comparative Totals For 2010)

	2011	2010
Cash Flows From Operating Activities		
Change in net assets	**$ (311,122)**	$ 909,268
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation	**332,032**	356,347
Amortization of bond issuance costs	**6,851**	6,851
Increase in allowance for doubtful accounts	**-**	20,000
Equity in earnings from joint venture	**26,680**	69,080
Net unrealized and realized losses (gains) on investments	**380,971**	(984,257)
Loss on interest rate swap contract	**47,158**	84,478
Contributions restricted for investment in perpetuity	**(34,000)**	-
Changes in assets and liabilities:		
(Increase) decrease in:		
Receivables	**140,208**	(234,778)
Prepaid expenses and other assets	**(19,575)**	(25,155)
Increase (decrease) in:		
Accounts payable and accrued expenses	**(206,557)**	209,062
Deferred revenue	**492,493**	253,469
Net cash provided by operating activities	**855,139**	664,365
Cash Flows From Investing Activities		
Purchases of investments	**(6,036,646)**	(1,324,162)
Proceeds from sales of investments	**4,279,158**	1,112,778
Purchases of property and equipment	**(9,977)**	-
Net cash used in investing activities	**(1,767,465)**	(211,384)
Cash Flows From Financing Activities		
Principal payment on bonds payable	**(200,000)**	(200,000)
Contributions restricted for investment in perpetuity	**34,000**	-
Advances from joint venture, net	**331,817**	-
Repayments to joint venture, net	**-**	(172,773)
Net cash provided by (used in) financing activities	**165,817**	(372,773)
Net (decrease) increase in cash and cash equivalents	**(746,509)**	80,208
Cash And Cash Equivalents:		
Beginning	**1,132,317**	1,052,109
Ending	**$ 385,808**	$ 1,132,317
Supplemental Disclosures Of Cash Flow Information		
Cash paid for income taxes	**$ 180,000**	$ 189,127
Cash paid for interest expense	**$ 281,557**	$ 284,986

See Notes To Financial Statements.

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2011 Audit Report for the American Statistical Association (continued)

American Statistical Association

Notes To Financial Statements

Note 1. Nature Of Activities And Significant Accounting Policies

Nature of activities: The American Statistical Association (the Association) was founded in 1839 and incorporated in 1841 under the not-for-profit laws of the Commonwealth of Massachusetts as a professional association serving statisticians and all individuals interested in the study and/or application of statistics. The Association's objectives are to foster statistics and its applications, to promote unity and effectiveness of effort among all concerned with statistical problems, and to increase the contribution of statistics to human welfare. The Association conducts meetings, produces publications devoted to statistical methodology and its applications, makes available information concerning the science of statistics and its contributions, cooperates with organizations in the advancement of statistics, stimulates research, promotes high professional standards and integrity in the application of statistics to problems of science and of public policy, fosters education in statistics, and, in general, makes statistics of service to science and society.

A summary of the Association's programs and services follows:

Meetings: The Association provides for various workshops and meetings that serve as a forum for the latest developments in statistical theory and application. These meetings offer a concentrated opportunity for the exchange of ideas and discussion of research findings among colleagues.

Publications: The Association produces various publications and magazines. These publications represent the Association's commitment to the ongoing enhancement of statistical education and the public's understanding of statistics.

Special projects: Represent various projects undertaken to further statistics among the public. This includes expenses for various awards presented, which increase the visibility of statistics and its methods with the general public.

Education: The Association offers a wide range of continuing education opportunities, which represent a forum for emerging statistics research. These programs include workshops, lectures, and expenses related to the production and sale of educational materials.

Membership: Expenses related to member service maintenance.

Grants and awards: Represent expenses related to providing advice and technical assistance, which enhance statistical education through the support of federal, state, and local government agencies.

Section expenses: Represent the Association's organization in groups by professional subject matter. These sections facilitate professional interchanges and research opportunities in statistics.

Management and general: Includes the functions necessary to secure proper administrative functioning of the Board of Directors, maintain an adequate working environment, and manage financial and budgetary responsibilities of the Association.

A summary of the Association's significant accounting policies follows:

Basis of accounting: The financial statements are prepared on the accrual basis of accounting, whereby, revenue is recognized when earned and expenses are recognized when incurred.

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American Statistical Association

Notes To Financial Statements

Note 1. Nature Of Activities And Significant Accounting Policies (Continued)

Basis of presentation: The financial statement presentation follows the recommendations of the Financial Accounting Standards Board (FASB) Accounting Standards Codification. As provided by the Financial Statements for Not-for-Profit Organizations Topic, the Association is required to report information regarding its financial position and activities according to three classes of net assets: unrestricted net assets, temporarily restricted net assets, and permanently restricted net assets.

Cash and cash equivalents: The Association considers all highly liquid instruments, which are to be used for current operations and which have an original maturity of three months or less, to be cash and cash equivalents. All other highly liquid instruments, which are to be used for the long-term purposes of the Association, are classified as investments.

Financial risk: The Association maintains its cash in bank deposit accounts, which at times, may exceed federally insured limits. The Association has not experienced any losses in such accounts. The Association believes it is not exposed to any significant financial risk on cash.

The Association invests in mutual funds, which are comprised of shares of publicly traded companies and fixed income obligations. Such investments are exposed to various risks, such as market and credit. Due to the level of risk associated with such investments and the level of uncertainty related to changes in the value of such investments, it is at least reasonably possible that changes in risks in the near term would materially affect investment balances and the amounts reported in the financial statements.

Receivables: Receivables are carried at original invoice amounts, less an estimate made for doubtful receivables based on a review of all outstanding amounts on a monthly basis. Management determines the allowance for doubtful accounts by identifying troubled accounts and by using historical experience applied to an aging of accounts. Receivables are written off when deemed uncollectible. Recoveries of receivables previously written off are recorded when received. The provision for doubtful accounts, based on management's evaluation of the collectability of receivables, was $10,718 at December 31, 2011. No interest is charged on any outstanding receivables.

Investments: Investments with readily determinable fair values are recorded at fair market value. To adjust the carrying value of the investments, the change in fair value is allocated among program activity revenue in the statement of activities.

Equity in joint venture: The Association has an investment in a certain joint venture for which the equity method of accounting is used. Under the equity method, the original investment is recorded at cost and is adjusted by the Association's share of undistributed earnings or losses of the joint venture.

Property and equipment: Property and equipment are stated at cost and are depreciated over their estimated useful lives on the straight-line method. The Association capitalizes all property and equipment purchased with a cost of $2,500 or more.

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American Statistical Association

Notes To Financial Statements

Note 1. Nature Of Activities And Significant Accounting Policies (Continued)

Valuation of long-lived assets: The Association accounts for the valuation of long-lived assets in accordance with the FASB Accounting Standards Codification. As required by the Non-Profit Entities Topic of the FASB Accounting Standard Codification, *Accounting for the Impairment or Disposal of Long-Lived Assets*, long-lived assets and certain identifiable intangible assets are to be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of the long-lived asset is measured by a comparison of the carrying amount of the asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the estimated fair value of the assets. Assets to be disposed of are reportable at the lower of the carrying amount or fair value, less costs to sell.

Interest rate swap contract: The Association follows the FASB Accounting Standards Codification, *Accounting for Derivative Instruments and Hedging Activities*, related to its participation in an interest rate swap contract in relation to its mortgage note, which is considered a derivative financial instrument. This codification standard requires that all derivative financial instruments be recognized in the financial statements at their fair value. Changes in the fair value of derivative financial instruments are recognized each period as a component of change in net assets.

Bond issuance costs: The Association paid certain customary fees as required to secure the note used to finance the acquisition of its new headquarters. These fees have been capitalized and are being amortized over the term of the bonds. Amortization expense was $6,851 for the year ended December 31, 2011.

Board designated net assets: The Board of Directors had designated $1,235,337 at December 31, 2011, of unrestricted net assets to be used for various section activities and other board-approved projects.

Revenue and support: Membership dues are recognized ratably over the applicable membership period to which they apply. Payments for memberships, subscription sales, product sales, or services to be rendered and received in advance are deferred to the appropriate period.

Meeting revenue is recognized at the time the meeting takes place. Amounts received in advance of the meeting are shown as deferred revenue.

Publication revenue is recognized upon delivery of the material.

All donor-restricted revenue is reported as an increase in temporarily or permanently restricted net assets, depending on the nature of the restriction. When a restriction expires (that is, when a stipulated time restriction ends or purpose restriction is accomplished), temporarily restricted net assets are reclassified to unrestricted net assets and reported in the statement of activities as net assets released from restrictions. Temporarily restricted net assets are reported as unrestricted net assets if the restrictions are met in the same period.

Functional allocation of expenses: The costs of providing various programs and other activities have been summarized on a functional basis in the statement of activities. Accordingly, certain costs have been allocated among the programs and supporting services benefited.

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American Statistical Association

Notes To Financial Statements

Note 1. Nature Of Activities And Significant Accounting Policies (Continued)

Income taxes: The Association is exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code. In addition, the Association qualifies for the charitable contribution deductions and has been classified as an organization that is not a private foundation. However, the Association is required to report unrelated business income to the Internal Revenue Service and the state of Virginia, as well as pay certain other taxes to local jurisdictions. The Association incurred approximately $152,500 in income tax expense on unrelated business income related to the net income earned on advertising sales for the year ended December 31, 2011.

The accounting standard on accounting for uncertainty in income taxes addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under this guidance, the Association may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate settlement. The guidance on accounting for uncertainty in income taxes also addresses de-recognition, classification, interest and penalties on income taxes, and accounting in interim periods.

Management evaluated the Association's tax positions and concluded that the Association has taken no uncertain tax positions that would require adjustments to the financial statements to comply with the provisions of this guidance. The Association files income tax returns in the U.S. federal jurisdiction. Generally, the Association is no longer subject to U.S. federal, state, or local income tax examinations by tax authorities for years before 2008.

Use of estimates: The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Prior year information: The financial statements include certain prior year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the Association's financial statements for the year ended December 31, 2010, from which the summarized information was derived.

Subsequent events: The Association evaluated subsequent events through March 19, 2012, which is the date the financial statements were issued.

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2011 Audit Report for the American Statistical Association (continued)

American Statistical Association

Notes To Financial Statements

Note 2. Receivables

Receivables consist of the following at December 31, 2011:

Other receivables	$ 126,651
Grants receivable	109,968
Trade accounts receivable	75,813
Due from joint venture	16,316
	328,748
Less provision for doubtful accounts	10,718
	$ 318,030

Note 3. Investments

Investments, at fair market value, consist of the following at December 31, 2011:

Equity mutual funds	$ 6,583,131
Fixed income mutual funds	4,375,068
Money market*	73,874
	$ 11,032,073

*Money market funds are not subject to the provisions of the fair value measurements, as they are recorded at cost.

The following summarizes investment loss for the year ended December 31, 2011:

Interest and dividends	$ 304,560
Realized loss	(219,172)
	85,388
Unrealized loss	(161,799)
	$ (76,411)

Interest, dividends, and realized losses are recorded in the applicable revenue and support line items in the statement of activities.

American Statistical Association

Notes To Financial Statements

Note 4. Equity In Joint Venture

The following schedule presents summarized financial information from the joint venture, in which the Association has equity ownership. Amounts presented for the year ended December 31, 2011, include the account of Technometrics (60 percent equity).

Condensed income statement information:	
Revenues	$ 172,083
Expenses	123,849
Net income	$ 48,234

Condensed balance sheet information:	
Total assets	$ 430,888
Total liabilities	49,272
Net equity	$ 381,616

Note 5. Property And Equipment

Property and equipment and accumulated depreciation at December 31, 2011, and depreciation expense for the year ended December 31, 2011, are as follows:

	Estimated Lives	Cost	Accumulated Depreciation	Depreciation Expense
Building	30 years	$ 7,320,951	$ 1,362,475	$ 244,031
Building leasehold improvements	30 years	1,170,369	212,171	39,243
Building renovation	30 years	23,100	3,980	783
Office equipment	5 years	85,235	80,836	2,513
Furniture and fixtures	5 years	211,869	211,869	17,156
Computer equipment	3 years	128,230	122,843	1,540
Software	3 years	208,079	189,064	26,766
Land	–	1,286,000	-	-
		$ 10,433,833	$ 2,183,238	$ 332,032

American Statistical Association

Notes To Financial Statements

Note 6. Temporarily And Permanently Restricted Net Assets

Temporarily restricted net assets were available at December 31, 2011, for the following purposes, and net assets were released from restriction by incurring expenses satisfying the restricted purpose:

	Balance December 31, 2010	Restricted Contributions	Investment Income	Released	Balance December 31, 2011
Cox Scholarship	$ 115,197	$ -	$ 325	$ 4,085	$ 111,437
Waksberg Award	69,664	250	166	2,811	67,269
Youden Award	42,814	-	292	2,830	40,276
Wray Smith Sch. Fund	30,324	-	85	1,238	29,171
Deming Lecture Fund	27,317	-	272	1,350	26,239
MG Natrella Scholarship Fund	26,879	-	70	1,000	25,949
EC Bryant Fund	25,025	-	236	2,521	22,740
Chambers Award (ACM Software)	18,609	-	53	500	18,162
Dixon Award	15,163	-	69	500	14,732
Griffifth Mentoring Award	10,340	3,500	52	2,298	11,594
Noether Memorial Fund	18,079	-	614	8,129	10,564
CA Jacobs Award	7,399	-	22	-	7,421
Bernard Harris Fund	-	7,510	10	515	7,005
Marquardt Memorial Fund	6,781	-	92	500	6,373
Waller Fund	5,621	-	71	514	5,178
Martha Aliaga Scholarship Fund	-	4,058	-	-	4,058
Wilks Memorial Fund	5,782	-	160	3,276	2,666
Chemostatistics Award	3,243	-	-	2,008	1,235
Karl E. Peace Award	-	1,000	-	-	1,000
Access to Statistics Fund	3,855	1,720	-	5,575	-
Promoting Statistics Fund	3,222	2,180	-	5,402	-
Excellence in Statistics Fund	550	375	-	925	-
	$ 435,864	$ 20,593	$ 2,589	$ 45,977	$ 413,069

Permanently restricted net assets consist principally of accumulated contributions for various awards, lecture series, and scholarships. These assets consist of the following at December 31, 2011:

	Balance December 31, 2010	Additions	Balance December 31, 2011
Noether Memorial Fund	$ 206,506	$ -	$ 206,506
Deming Lecture Fund	67,275	-	67,275
Youden Award	61,082	-	61,082
EC Bryant Fund	60,000	-	60,000
Wilks Memorial Fund	47,143	-	47,143
Karl E. Peace Award	-	34,000	34,000
Marquardt Memorial Fund	26,250	-	26,250
Waller Fund	20,000	-	20,000
	$ 488,256	$ 34,000	$ 522,256

American Statistical Association

Notes To Financial Statements

Note 6. Temporarily And Permanently Restricted Net Assets (Continued)

The Board of Directors of the Association has interpreted the Uniform Prudent Management of Institutional Funds Act (UPMIFA) as requiring the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds, absent explicit donor stipulations to the contrary. As a result of this interpretation, the Association classifies as permanently restricted net assets (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund. The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the Association in a manner consistent with the standard of prudence prescribed by UPMIFA. In accordance with UPMIFA, the Association considers the following factors in making a determination to appropriate or accumulate donor-restricted endowment funds:

- The duration and preservation of the fund
- The purposes of the Association and the donor-restricted endowment fund
- General economic conditions
- The possible effect of inflation and deflation
- The expected total return from income and the appreciation of investments
- Other resources of the Association
- The investment policies of the Association

The Association has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain purchasing power of the endowment assets.

All earnings of the endowment are reflected as temporarily restricted net assets until appropriated for expenditure by the various Committees of the Association. The Board of Directors has assigned a Committee to each program for the purposes of selecting and recommending individuals for awards or grants.

For the year ended December 31, 2011, the Association had the following endowment-related activities:

	Temporarily Restricted	Permanently Restricted
Endowment net assets – December 31, 2010	$ 131,420	$ 488,256
Additions	-	34,000
Net appreciation and income	1,737	-
Appropriation of endowment assets for expenditure	(1,737)	-
Endowment net assets – December 31, 2011	$ 131,420	$ 522,256

2011 Audit Report for the American Statistical Association (continued)

American Statistical Association

Notes To Financial Statements

Note 7. Retirement Plans

The Association has a 401(k) profit sharing plan and a money purchase plan. Both plans cover substantially all full-time employees from date of hire. Under the terms of the 401(k) profit sharing plan, the Association will match 100 percent of the participating employee's contributions, up to three percent of the employee's salary. Under the terms of the money purchase plan, the Association contributes six percent of an eligible employee's compensation to the plan. Contribution expense to the plans is as follows for the year ended December 31, 2011:

Money purchase plan	$ 175,293
401(k) profit sharing plan	83,208
	$ 258,501

Note 8. Related Party Transactions

The Association is a co-sponsor in one joint venture. It has a maintenance agreement with the same joint venture, in which it provides management and collection services, office space, and editorial and administrative support.

The following schedules summarize the Association's financial activity with the joint venture for the year ended December 31, 2011:

Due from Joint Venture:	
Technometrics	$ 16,316
Due to Joint Venture:	
Technometrics	$ (430,014)
Maintenance Agreement Revenue:	
Technometrics	$ (39,922)

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American Statistical Association

Notes To Financial Statements

Note 9. Bonds Payable

On August 1, 2005, the Association entered into an agreement with the Industrial Development Authority of the City of Alexandria to issue $6,500,000 of Industrial Development Revenue Bonds on behalf of the Association to finance the purchase and renovation of a new headquarters building. The Bonds are secured by a letter of credit (LOC) issued by SunTrust Bank and bear an adjustable interest rate periodically set by a remarketing agent. The LOC agreement between the Association and SunTrust Bank, dated August 1, 2005, bears an interest rate of .45 percent. Interest expense incurred for the year ended December 31, 2011, was $281,557.

Annual principal payments on the bonds payable at December 31, 2011, are due in future years as follows:

Years Ending December 31,	
2012	$ 200,000
2013	200,000
2014	200,000
2015	200,000
2016	200,000
2017 – 2030	4,500,000
	$ 5,500,000

The above-mentioned note is collateralized by the land and building purchased by the Association.

In connection with the mortgage note, the Association has agreed, among other things, to (1) maintain an unrestricted liquidity ratio not less than 80 percent of the funded debt and (2) maintain a debt coverage ratio of 1.25 to 1. As of December 31, 2011, the Association did not meet the debt coverage ratio covenant requirement associated with the mortgage note. The Association subsequently received a waiver from the bank related to that debt covenant.

Note 10. Interest Rate Swap Contract

The Association has an interest rate swap contract with a bank to reduce the impact of changes in the interest rates on its variable mortgage note. The swap contract was entered into for a ten-year period commencing on October 14, 2005. The notional principal amount of the interest rate swap contract was $5,500,000 as of December 31, 2011. In accordance with the swap contract, the Association pays a fixed rate of interest of 3.99 percent and receives a variable interest rate equal to the USD-BMA municipal swap index (0.11355 percent at December 31, 2011). The Association recognized a loss of $47,158 under the interest swap contract for the year ended December 31, 2011. At December 31, 2011, the fair value of the swap contract was a liability of $620,608. The swap contract terminates in August 2015.

Note 11. Commitments

Hotel space: The Association reserves hotel space for its conventions several years in advance. The contracts stipulate the number of rooms to be reserved and the time period for which they are to be reserved. As of the date of this report, contracts for hotel space had been entered into through 2017. However, due to the numerous variables involved, the Association's potential liability under these contracts cannot be determined.

Employment agreement: The Association has entered into an employment contract with the Executive Director of the Association, which expires on August 15, 2015. The contract provides for severance payments equal to a maximum amount of up to ten months of compensation, depending on the years of service.

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American Statistical Association

Notes To Financial Statements

Note 12. Contingencies

The Association participates in a number of federally assisted grant programs, which are subject to financial and compliance audits by the federal agencies or their representatives. As such, there exists a contingent liability for potential questioned costs that may result from such an audit. Management does not anticipate any significant adjustments as a result of such an audit.

Note 13. Fair Value Measurements

The FASB Accounting Standards Codification standard on fair value measurements establishes a single authoritative definition of fair value, sets out a framework for measuring fair value, and requires additional disclosures about fair value measurements. This standard applies to all assets and liabilities that are being measured and reported on a fair value basis. The standard requires disclosure that establishes a framework for measuring fair value in GAAP and expands disclosure about fair value measurements. This standard enables the reader of the financial statements to assess the inputs used to develop those measurements by establishing a hierarchy for ranking the quality and reliability of the information used to determine fair values. The standard requires that assets and liabilities carried at fair value will be classified and disclosed in one of the following three categories:

Level 1 – Quoted market prices in active markets for identical assets or liabilities
Level 2 – Observable market-based inputs or unobservable inputs corroborated by market data
Level 3 – Unobservable inputs that are not corroborated by market data

In determining the appropriate levels, the Association performs a detailed analysis of the assets and liabilities that are subject to the standard. At each reporting period, all assets and liabilities for which the fair value measurement is based on significant unobservable inputs are classified as Level 3. There were no Level 3 inputs for any assets held by the Association at December 31, 2011.

The table below presents the balances of assets and liabilities measured at fair value on a recurring basis by level within the hierarchy:

	Total	Level 1	Level 2	Level 3
Financial assets:				
Equity mutual funds:				
S&P 500 Index fund	$ 3,914,282	$ 3,914,282	$ -	$ -
International fund	1,137,127	1,137,127	-	-
Small and mid-cap fund	688,527	688,527	-	-
Global real estate fund	683,391	683,391	-	-
Emerging markets	159,804	159,804	-	-
	6,583,131	6,583,131	-	-
Fixed income mutual funds:				
Total return	3,495,593	3,495,593	-	-
High yield	879,475	879,475	-	-
	4,375,068	4,375,068	-	-
	$ 10,958,199	$ 10,958,199	$ -	$ -
Financial liabilities:				
Interest rate swap contract	$ (620,608)	$ -	$ (620,608)	$ -

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American Statistical Association

Notes To Financial Statements

Note 13. Fair Value Measurements (Continued)

The equity and fixed income mutual funds of the Association are publicly traded on the New York Stock Exchange and are considered Level 1 items. Money market funds of $73,874 are included in the total investments. Money market funds are not subject to the provisions of the fair value measurements, as they are recorded at cost. The Association's interest rate swap is a pay-fixed, receive-variable interest rate swap based on the LIBOR swap rate. The LIBOR swap rate is observable at commonly quoted intervals for the full term of the swap, and is therefore, considered a Level 2 item.

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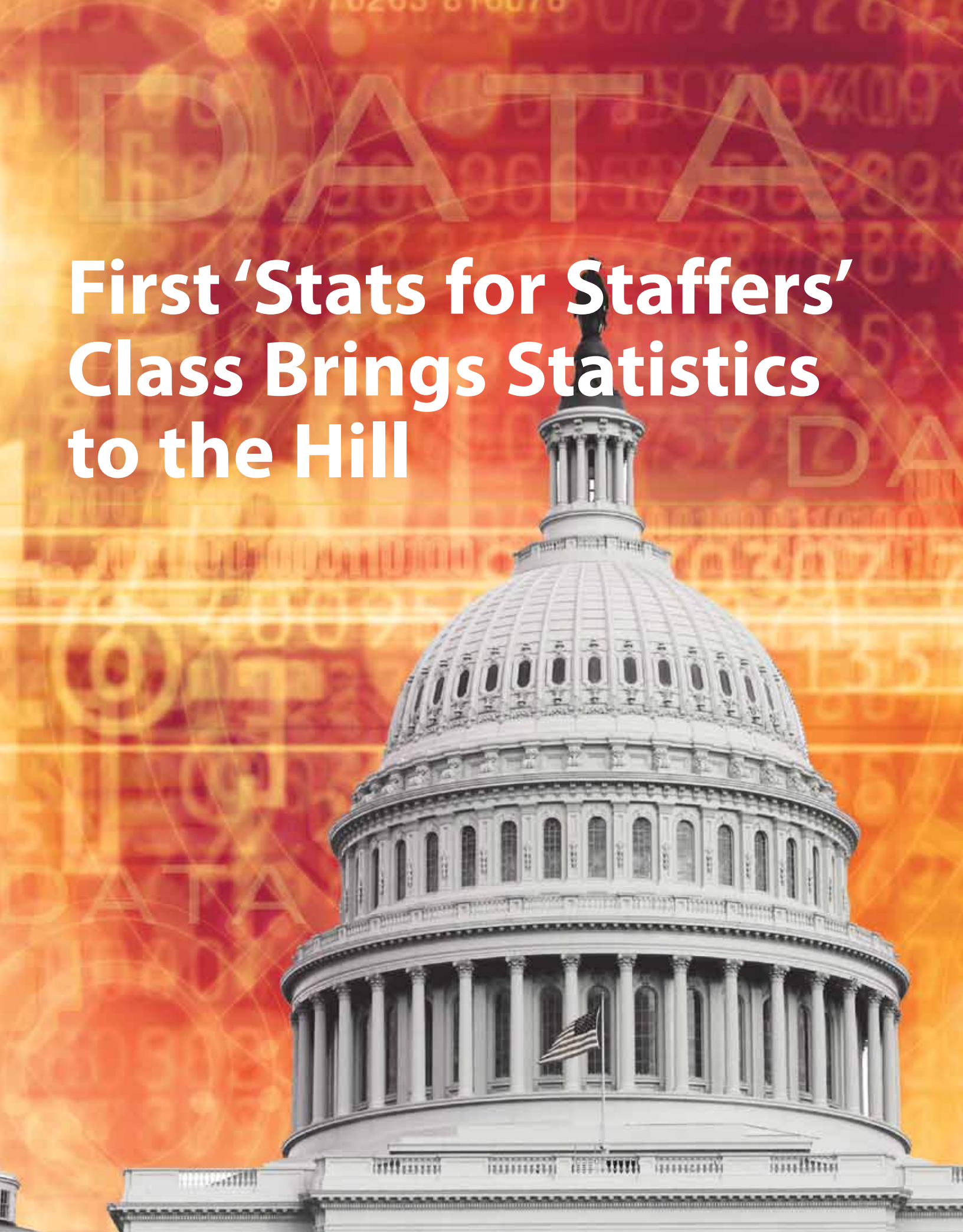

First 'Stats for Staffers' Class Brings Statistics to the Hill

The ASA offered its first "Stats for Staffers" class on April 27 in conjunction with the Senate Office of Education and Training (OET). The class, titled "How Sound Are the Data?" was the first in the OET's Critical Statistical Thinking series. Taught by Mary Foulkes of The George Washington University, the class lasted 90 minutes and was attended by 22 staffers from both personal and committee offices.

The class advertisement showed a picture of President Harry S. Truman with the famous newspaper headline, "Dewey Defeats Truman," and promised an interactive discussion of questions to consider regarding the value of the data behind a claim or study and common data sources.

Foulkes, who has given two courses on statistics to journalists at the ASA, walked the staffers through the hierarchy of Green and Byar's 1984 *Hierarchy of Evidence* (from anecdotal case reports to confirm randomized controlled clinical trials) and provided basic rules of thumb for judging the soundness of data. She also discussed the normal distribution, *p*-values, and confidence intervals.

The class received positive feedback from the staffers and enthusiasm for more classes on topics such as judging report conclusions, interpreting study results, and understanding data and graphics. Other suggested classes include survey methodology, a class on labor and economic statistics, and statistics for geographical information systems.

The original idea for such a class goes back to the 2009 congressional visits associated with the Joint Statistical Meetings that took place in Washington, DC, when 60 ASA members visited 120 offices. One of the staffers suggested statistics refresher classes and Sharon Hessney, an ASA member spending a year working in Sen. Al Franken's (D-MN) office, met with the head of the Senate OET and sold the idea.

Mary Foulkes of The George Washington University teaches Stats for Staffers attendees.

Twenty-two congressional staffers from both personal and committee offices listen to Mary Foulkes discuss basic rules of thumb for judging the soundness of data in the Russell Senate Office Building, Washington, DC.

Foulkes was asked to give the first Stats for Staffers class because of the two successful workshops she has facilitated on statistical concepts in medicine for journalists and her support for the development of Stats for Staffers. To view her slides, visit *www.amstat.org/outreach/pdfs/StatisticalCriticalThinkingFoulkes.pdf*.

For more information about Stats for Staffers, visit *www.amstat.org/outreachStatsForStaffers*. ■

MEMBER SPOTLIGHT

Using Statistics to Find Real-Life Solutions

ASA member Jing Shyr uses statistics to help cities solve issues

Jessie Biele

When it comes to statistics, ASA member and IBM Chief Statistician Jing Shyr thinks of the bigger picture. "So the key is I continue to think about how statistics can be part of the bigger solution," Shyr said. "How statistics can really solve the real problems in our society."

This past fall, Shyr spent three weeks in Syracuse, New York, taking part in IBM's Smarter Cities Challenge. The Smarter Cities Challenge is IBM's largest single philanthropic program. Each participating city receives a donation consisting of the time and expertise of seasoned IBM employees who work closely with the city government to offer recommendations for a particular issue. Shyr joined four of her colleagues to work with Mayor Stephanie Miner, evaluate data about the city's growing property vacancy problem, and propose solutions.

Shyr was inspired to participate in the Smarter Cities Challenge because of IBM's focus on real-life solutions and innovation. "I started to really think about getting more experience, how to become part of the solution," Shyr explained. "That is the reason why I took the opportunity to work on the Smarter Cities initiative."

Shyr earned her PhD in statistics from Purdue University in 1984 after emigrating from Taiwan on a student visa. After graduating, she took a position teaching introductory statistics, probability theory, and statistics methods in the Owen Graduate School of Management at Vanderbilt University in Tennessee. While teaching at Vanderbilt, Shyr faced the challenge of teaching her students to enjoy statistics and understand how statistics applies to real-life situations.

"That was a time where I faced a really big challenge," Shyr reflected. "MBA students have a lot of questions about why they want to learn statistics. They asked, 'What can statistics do for me?'"

She continued, "I wasn't offended, and I didn't have the industry experience to come up with really good examples to inspire them. And so I felt bad and I said to myself, 'You know, after so many years in education, maybe I should have gone to see how statistics can help to address real problems, instead of teaching somebody just the theory.'"

After two years of teaching at Vanderbilt, Shyr was recruited for a statistician job at SPSS. There, she designed algorithms for statistics software. She was eager to learn more about the company and worked closely with customers to understand their needs and how SPSS helped fulfill them. She worked as a statistical consultant for stock option traders to design statistical analyses for stock options and she was a consultant for an engineering project evaluating the survival rate of water pipes in Houston, Texas.

"In the beginning, I was really learning how to bring statistics computation into software development," said Shyr. "So I learned so much in the beginning about software development. As I grew, I became more experienced and I started to have more and more opportunities to talk to customers, and that kind of experience inspired me to continue to contribute an idea of how to make statistics more fun in software development. It's very good when you start something and then it becomes a bigger thing, so you try to do a better job to really make sure that the statistics you're supposed to implement have a real meaning for the people who are using them."

As she learned more about the company, she moved up within SPSS and eventually became a chief statistician, senior vice president of research and development, and the general manager of SPSS China Xian Software, Inc. One of her greatest accomplishments while general manager of SPSS China Xian Software, Inc., Shyr used both her strategic and technical management skills to coordinate the setup of a lab in China and helped staff its employees. As of 2009, 200 employees worked at the lab, and Shyr helped organize members of the U.S. team to help provide the offshore team with guidance. "We were able to grow our technical staff in the United States to become leaders," she said. "They have the experience to help mentor the junior staff in China."

In 2009, IBM acquired SPSS and Shyr's role changed to chief engineer at the company's business analytics division. She also earned the title of distinguished engineer, a rare honor. "IBM has

more than 400,000 employees; there are only about 572 distinguished engineers in the company," she explained. "Only about 13% of 572 distinguished engineers are female. It is very rare."

Shyr has had a long and fulfilling path to success, but she didn't expect her journey to take her to her current role. She has won many honors, including the Distinguished Alumni Award from Purdue University's College of Science in 2000. In 2005, she won a distinguished alumna award from National Chiao-Tung University of Taiwan, her undergraduate alma mater. She has served on the advisory council of the college of science at Purdue for six years.

"I didn't think 25 years would pass just like that," she said. "I love math. I don't think that the world understands math, so my challenge was 'Could I take the math, the statistics I love the most, and can it be used in a very common language to allow people to leverage its usage and enjoy it themselves, or use it to answer questions they have in mind?'"

Shyr credits her experience working in industry for helping her gain a better understanding of statistics. "I was not satisfied at the level I was teaching. I was teaching the way that I knew statistics, and I didn't think that when I was a student, I didn't think that the knowledge that I learned would apply to society," she said. "When I was teaching the same thing to them, I didn't think I would improve this generation of education, so I decided I was going to look for a different path. I had no idea what path I was looking for, but I wanted to go work for industry so I could get real experience so I could teach better."

She advises statisticians to think of ways to apply their knowledge to find solutions to real-life problems. She uses her experience in Smarter Cities as an example.

If I were the mayor of Syracuse, how do I take all this information and send it into action?

"The one thing I think statisticians should do is really take their knowledge and thinking about the real-world data and thinking about how to apply our knowledge to help solve this data and to discover this important information and help the world become better," she explained.

"That's what inspires me the most. In the end, when I saw the results and I was sitting there and I was thinking, 'If I were the mayor of Syracuse, how do I take all this information and send it into action?' And that moment makes me feel very proud. Not because I'm proud of my ability, but I'm proud that statistics is really useful." ■

ASA–SIAM

What Does an Acquisitions Editor Do?

One of the many people a publishing house has on staff is the acquisitions editor (AE). You may already have been contacted by an AE at some point in your career or have just heard the term and wondered what one does. Although the goal of an AE in simple terms is to acquire new books for his or her publisher, you'll discover that the AE has three main roles in that process:

Connector: The AE is often the first contact between a potential author and a publishing house. It's his or her job to make new connections via such actions as attending conferences or networking with the assistance of editorial boards and established authors. An AE might reach out to you as a potential author and ask you to meet at a conference or have a short phone call to discuss your research, the benefits of publishing with his or her publishing house, and how to go about completing and submitting your book proposal if you're interested in taking that step. Once you've decided you're going to write a book and have chosen the publisher(s) to which you want to submit your book proposal, you'll begin working closely with an AE.

Communicator: The AE will be your main contact person at the publisher's office once you're a potential author. You'll submit your proposal, hear back from the AE that he or she is sending it out for review, and then you'll get more email when the reviewers have completed their work and the AE sends you their anonymous comments. While the review process is under way, you might also communicate with the AE to clarify how the publisher handles issues such as copy editing and marketing so you're prepared for the next steps should you be offered a publishing contract for your book.

Champion: Assuming the reviewers have indicated enthusiasm for your book proposal, your AE will be the key person to champion the book to the powers that be. The AE will present your proposal and the reviews to this group of decisionmakers to encourage them to select the book for publication. The result of your combined efforts with your AE will hopefully be an offer of a publishing contract.

If a contract is offered, your AE will once again don the cap of the communicator and negotiate with you such details as royalty percentages and manuscript deadlines.

The next (or first) time you get an email or phone call from an acquisitions editor, consider taking him or her up on the offer of discussing whether your work would warrant a book project and, if so, whether it would be a good fit for the publisher the AE represents. You just might find a mutually beneficial relationship that can result in sharing your valuable research with a new or expanded audience. ■

MASTER'S NOTEBOOK

International Experiences in Statistics

Eric Vance

I traveled an unusual path to my current position as an assistant research professor and director of LISA (Virginia Tech's Laboratory for Interdisciplinary Statistical Analysis). Before entering the statistical science program at Duke University as an MS/PhD student, I journeyed through 67 countries. I hope you are well on your way to forging your own path in statistics, and maybe after reading about my experiences and ideas for how statistics can merge with international travel, you will begin to work/think/travel internationally.

When I graduated with an undergraduate degree in math, economics, and statistics, I had no job. I had lots of 'interview experience' and many friends with jobs, but I was unemployed. I did, however, have a plan, and it was not to go to graduate school. In fact, entering graduate school straight out of college had not even crossed my mind. I intended to travel throughout Europe for three months and then come home and look for employment.

I bought a one-way ticket to Europe and set off with a college friend to backpack across the Mediterranean. After two months and many beaches, trains, museums, and youth hostels, my friend flew home and I discovered that traveling alone was not so scary. Nearly everywhere I went, I found myself in a community of travelers. Sometimes, I convinced others to join me toward my next destination, but I usually headed off alone and met new friends along the way.

Eric Vance (left) and a biologist from Morocco discuss statistics at the Morocco/Mauritania border.

The more I traveled and met people who described the other wonderful and exotic places they had been, the more I wanted to travel. I spent eight and a half months traveling through Europe, eight months in Australia and New Zealand, and six and a half months in South and Southeast Asia. I traveled cheaply (e.g., three months in India cost, in total, $900), and I sent my friends and family regular postcards and the occasional email (this was just before the ubiquity of Internet cafés) to keep them updated on my adventures. These updates paid off when I ran out of money and two family members offered to loan me money to continue traveling until I was ready to come home. I figured that through these loans, 23-year-old Eric was borrowing from 26-year-old Eric, and my 26-year-old self was saying, "Keep traveling, keep traveling, keep traveling!" So I did, until after exactly 700 days, I was ready to come home.

Not So Fast

About a year later, I traveled again, this time for seven and a half months through Central and South America. Twenty-five-year-old Eric was now borrowing money from his 28-year-old self. One day while hiking the Inca Trail on the way to Machu Picchu in Peru, I had just climbed a steep mountain and was waiting for my travel buddies at the top of an ancient cloud forest. The thought occurred to me, "I will never be too old for anything."

Other Opportunities for Statisticians to Gain International Experience

People to People
www.peopletopeople.com/pages/default.aspx

Statistics Without Borders
http://community.amstat.org/statisticswithoutborders/home

DataKind
http://datakind.org/2012/04/data-borders-officially-datakind

The American Academy for the Advancement of Science (AAAS) has an **"on-call scientist" program** to connect scientists interested in volunteering their skills and knowledge with human rights organizations in need of scientific expertise (*http://oncallscientists.aaas.org*). There are many human rights groups doing work overseas in need of statistical expertise that don't know how statistics can be used to improve their work. Learn about their work and see how you can add value to it by using statistics.

Also, check with your local chapter of **StatCom**, or start your own. Is there a local group planning to travel to a foreign country to build a school? Talk to them about what effect they think they will have. Maybe they'll be interested in quantitative ways to measure it.

Attend an **international statistics conference**.

Take a six-month **sabbatical** and travel to a region of the world you've always wanted to see. Or take a few months between jobs to see the world. When traveling, you experience highs and lows that are not part of your everyday routine.

Right then, I made the decision to not let my age deter me from anything I wanted to do. So what that I was 25 and still hadn't ever had a 'real' job. Who cared that it had been four years since I last solved an equation, did a proof, or programmed a computer? I didn't care that if I went to graduate school I would be over 30 by the time I got my PhD. I had decided, right then, that I would never be too old for anything.

When I returned home, I studied for the GRE and hustled professors who barely knew me from classes 4–5 years earlier for letters of recommendation. I applied to six statistics PhD programs and visited five of them before leaving for my third international trip, this time to Africa for six months.

During my first full day in Africa, just minutes after I learned to never trust a man from Fez with a knife scar on his face, I stopped at an Internet café and read an email from Duke University informing me that I had been accepted into their statistics graduate program with the added bonus of a fellowship.

Statistical Consulting 101

My introduction to statistical consulting occurred at the border of Western Sahara (a former Spanish territory claimed by Morocco) and Mauritania while trying to hitch-hike a ride across the mine-filled border crossing. A Moroccan biologist studying the Saharan desert fox learned I was a future statistics graduate student and asked me about sampling methods related to his research. He drew a diagram for me on the sand, and then I tried to explain a concept to him, but I found a ride through the minefield into Mauritania before we got very far.

I learned other lessons while traveling in Africa, namely, toilets flush counter-clockwise in Timbuktu, and, more importantly, African problems require African solutions. Even if I thought the bus system in Ethiopia was absurd and could think of ways to 'fix' it, any solution to a problem in Africa would have to come from someone with insider knowledge.

My international travel experience also helped me learn to listen to my intuition: *Get out of the car now, yes even though you'll be stranded in the middle of nowhere. Jump back into the boat, as there's a man-eating shark swimming right toward you! Don't worry about not being able to breathe, just relax and move your head to a different position when you want to breathe. Seriously, do not trust men from Fez with knife scars on their faces!*

Maybe most importantly, my international travel experience helped me during graduate school. During my third year at Duke, a biologist studying social relationships in a population of African elephants came into the statistical consulting center. Since I had been to Africa, the director of the consulting center figured I must like elephants and asked if I would like to work on the project. Because I was familiar with elephants and the setting of the client's study, that project led to a collaboration, and that turned into two chapters of my dissertation on social networks in African elephants.

The Gift That Keeps Giving

International travel also has helped me in my faculty position at Virginia Tech. The many and diverse people I met while traveling has helped me be a better manager, teacher, and statistician. My experiences have given me ideas for how LISA can help expand the global impact of statistics by involving students in international research projects and educational exchange programs and building statistics capacity at universities in other countries.

The first of three international initiatives in LISA is to involve statistics students in the study design phase, the data collection phase, and the analysis and interpretation phases of data-intensive international research projects. These on-the-ground statisticians understand the research objectives, know how the data will be analyzed, and are responsible for ensuring the data are of high quality to address the research questions.

Last summer, LISA graduate student Mark Seiss spent 10 weeks in Mozambique as an on-the-ground statistician helping to design a household survey questionnaire, train local surveyors, and analyze and clean the survey data on a nightly basis to assess the effect of an economic development project to drill bore wells and install hand pumps in rural villages without access to clean water. His work was wildly successful and will be replicated next summer for the follow-up study of this impact evaluation. When more researchers with data-intensive projects hear about the value of statisticians in the field, more opportunities will be generated for students to gain this experience.

The second initiative is to exchange graduate students at Virginia Tech with universities abroad to improve the training of statisticians in communication and collaboration. The idea is that an experienced lead collaborator in LISA, who will have collaborated with 20–40 researchers at Virginia Tech, can work in an international statistical consulting center for six months while a student from the international university comes to Virginia Tech to work in LISA.

The third initiative is to help build statistics capacity in developing countries by training foreign statisticians in LISA to communicate and collaborate with nonstatisticians and support them with experienced collaborative statisticians in their home country to help local researchers design experiments, collect data, analyze data, interpret results, make decisions, and communicate the results and decisions to nonstatisticians. The idea is to identify a statistician from a developing country and train them in 21st-century statistics at Virginia Tech and LISA.

Once trained, students can return as a faculty member at their home university and advertise their services to researchers as a collaborative statistician. To support the creation of a sustainable statistical collaboration center at the university in the developing country, one or more LISA students can visit, on a revolving basis, the new collaboration center for six months to help run the it, collaborate with researchers, teach 21st-century statistics, and spread the use of statistical thinking. In subsequent years, LISA can train additional statisticians from foreign countries to help grow the newly created centers or establish new ones. ■

BAPS

BEYOND AP STATISTICS

Wednesday, August 1, 2012
8:30 a.m. - 4:30 p.m.
San Diego, California

A WORKSHOP FOR EXPERIENCED TEACHERS

Sponsor: ASA-NCTM Joint Committee on Curriculum in Statistics and Probability

The ASA/NCTM Joint Committee is pleased to sponsor a Beyond AP Statistics (BAPS) workshop at the annual Joint Statistical Meetings (JSM)* in San Diego, California, on August 1, 2012. Organized by Roxy Peck, the BAPS workshop is offered for AP statistics teachers and consists of enrichment material just beyond the basic AP syllabus. The course is divided into four sessions led by noted statisticians. Topics in recent years have included experimental design, survey methodology, multiple regression, logistic regression, what to do when assumptions are not met, and randomization tests.

COST:

The course fee for the full day is $50. Attendees do not need to register for JSM to participate in this workshop, although there is discount JSM registration for K–12 teachers available at *www.amstat.org/meetings/jsm/2012*.

LOCATION:

Hilton San Diego Bayfront, located at 1 Park Blvd., San Diego, CA 92101 near the San Diego Convention Center (workshop meeting room location to be announced)

PROVIDED:

Refreshments (lunch on your own)

Handouts

Pass to enter the exhibit hall at the Joint Statistical Meetings

Certificate of participation from the American Statistical Association certifying professional development hours

Optional graduate credit

REGISTRATION:

More information and online registration is available at *www.amstat.org/education/baps*. Registrations will be accepted until the course fills, but should arrive no later than July 12. Space is limited. If interested in attending, please register as soon as possible.

QUESTIONS:

Contact Rebecca Nichols at *rebecca@amstat.org* or (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. JSM activities include statistics and statistics education sessions, poster sessions, and the exhibit hall.

SCIENCE POLICY

NIJ Looking for a Few Good Statisticians

Forensic science R&D benefits from statistical support

Gerald M. LaPorte and David B. Fialkoff

For this month's guest column, Gerald LaPorte, a physical scientist at the National Institute of Justice (NIJ), and David Fialkoff, an NIJ contract writer, describe steps NIJ has taken over the last few years to address weaknesses in forensic science identified in the 2009 National Academies Report, Strengthening Forensic Science in the United States: A Path Forward. *The authors request the involvement of statisticians in solicitations for research to bolster the scientific foundations of forensic science disciplines.*

~Steve Pierson, ASA Director of Science Policy

The need for increased collaboration between statisticians and forensic scientists became more focused after the National Academies published *Strengthening Forensic Science in the United States: A Path Forward* in 2009. This study, initiated and supported by NIJ and authored by a committee assembled by the National Research Council (NRC), gathered testimony from a cross-section of forensic science disciplines and made a number of critical recommendations. The study concluded that forensic science, as a whole, produces valuable evidence that contributes to the successful prosecution and conviction of criminals, as well as the exoneration of the innocent. The report also identified systemic weaknesses in forensic evidence and emphasized the harm done when poor forensic evidence is used in adjudicating a case.

The NRC committee made 13 recommendations designed to remove or ameliorate these systemic weaknesses. Of particular note here are recommendations three and five:

Recommendation 3: Research is needed to address issues of accuracy, reliability, and validity in the forensic science disciplines … in the following areas:

(a) Studies establishing the scientific bases demonstrating the validity of forensic methods

(b) The development and establishment of quantifiable measures of the reliability and accuracy of forensic analyses. Studies of the reliability and accuracy of forensic techniques should reflect actual practice on realistic case scenarios, averaged across a representative sample of forensic scientists and laboratories. Studies also should establish the limits of reliability and accuracy that analytic methods can be expected to achieve, as the conditions of forensic evidence vary. The research by which measures of reliability and accuracy are determined should be peer reviewed and published in respected scientific journals.

(c) The development of quantifiable measures of uncertainty in the conclusions of forensic analyses

(d) Automated techniques capable of enhancing forensic technologies

Recommendation 5: [Research is encouraged in programs] on human observer bias and sources of human error in forensic examinations. Such programs might include studies to determine the effects of contextual bias in forensic practice. In addition, research on sources of human error should be closely linked with research conducted to quantify and characterize the amount of error.

NIJ agrees with these NRC recommendations. We think research, development, and evaluation are systematic processes that build a more efficient, effective, and fair criminal justice system. We are committed to providing the knowledge and applying it to meet the rigorous scientific and technical challenges frequently encountered in the various disciplines of forensic science.

Even before the NRC released their report, NIJ was investing hundreds of millions of dollars into research and development (R&D). The great majority was allocated to DNA R&D.

Like many other disciplines, research priorities in forensic science are affected by current events and technological innovations. So, although critical research in the forensic sciences was taking place before 2009, the NRC report led to a shift in

Science Policy Actions

ASA signs letter in support of STEM education funding and NSF budget

ASA tracks FY13 budget developments for NIH, NSF, and federal statistical agencies: *http://tinyurl.com/FY13NIH-NSF* and *http://tinyurl.com/FY13StatAgencies*

NIJ's priorities. In 2009, NIJ introduced a first-of-its-kind solicitation, titled "Fundamental Research to Improve Understanding of the Accuracy, Reliability, and Measurement Validity of Forensic Science Disciplines" (*www.ncjrs.gov/pdffiles1/nij/sl000878.pdf*).

Research funded under the "fundamental research" solicitation addresses the strengths and limitations of the following:

- Analytical procedures
- Sources of bias and variation
- Quantification of uncertainties
- Measures of performance
- Procedural steps in the analysis of forensic evidence
- Methods to continuously monitor and improve the forensic evidence analysis process

The goal was to investigate the fundamental underpinnings of forensic science disciplines that are primarily qualitative and develop more objective measures to improve current practices. NIJ has now funded 37 fundamental research grants totaling more than $15 million.

Although it is too early to fully evaluate the effect of fundamental research over the past several years, American Academy of Forensic Sciences (AAFS) President-elect Douglas H. Ubelaker wrote the following in the AAFS newsletter in 2010:

> A recent major boon to research in forensic science has been the National Institute of Justice's Office of Investigative and Forensic Sciences (OIFS), whose sole goal is to strengthen the quality and practice of forensic science. Over the past two years, OIFS has channeled over $300 million to this end, of which over $45 million directly targeted research. Support for research is channeled through three portfolios: Forensic DNA Research and Development, General Forensics (non-DNA) Research and Development, and Fundamental Research. …

In 2011, NIJ released two new solicitations: Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes (*www.ncjrs.gov/pdffiles1/nij/sl000945.pdf*) and Applied Research and Development in Forensic Science for Criminal Justice Purposes (*www.ncjrs.gov/pdffiles1/nij/sl000944.pdf*).

With NIJ funding, researchers have contributed significantly to the evolution of DNA analysis, but research efforts in the areas of impression and pattern evidence such as fingerprints, firearms and toolmark examinations, and document examinations are challenging, since these disciplines are more qualitative and experienced based. Since 2009, NIJ has awarded more than $71 million to studies in various forensic disciplines. In past years, the largest portion has gone to forensic DNA ($24 million), but a significant amount has been allocated to friction ridge ($8.5 million), impression evidence ($7.7 million), and fire and arson investigation ($2.8 million). Overall, 67% of the funding is for applied research and 33% is for basic and fundamental research.

Like all scientific research agencies, NIJ is committed to building knowledge through interdisciplinary approaches and partnerships with other professional scientists such as anthropologists, chemists, and statisticians. At the core of our research and development program is the need for rigorous peer review. Our process involves peer reviewers who evaluate submitted proposals, and, just as important, a panel of reviewers who evaluate the completed research to provide feedback to the grantee. Currently, NIJ has more than 170 active awards, many of which are quantitative studies, and this has created a stringent demand for qualified statisticians.

The need to develop more quantifiable data in the areas of impression and pattern analysis, for example, has caused the forensic community to focus on expanding the scientific basis of the accuracy, validity, and reliability of these disciplines. And with the input of statisticians, NIJ is confident these goals can be achieved. In other words (to paraphrase a popular movie), NIJ is looking for a few good statisticians because NIJ can handle the truth.

To find NIJ's current funding opportunities, visit *www.nij.gov/nij/funding/current.htm*. For more information about NIJ's forensic R&D activities, visit *www.nij.gov/nij/topics/forensics/forensic-awards.htm* or send an email to *forensic.research@ojp.usdoj.gov*. We also invite you to the 2012 NIJ conference, to take place June 18–20 in Arlington, Virginia. For more information, visit *www.nij.gov/events/nij_conference/welcome.htm*. ■

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How Can We Raise Public Awareness of Statistics?

Amy Herring and Narayanaswamy Balakrishnan

As we "Celebrate our Past, Energize our Future" we reflect on a number of exciting opportunities that expand our "big tent" organization by bringing new attention to statistics via enhanced public visibility and education.

One of the ASA's missions is to enhance statistics education at all levels. Outreach activities of the ASA have focused on educators as a means of reaching hundreds of thousands of K–12 students nationwide. Our members were critical in development of the AP Statistics exam, which was introduced in 1997 and was taken by more than 140,000 students in 2011 alone. The AP statistics course has increased the number of students who have a basic understanding of statistical concepts.

ASA members were instrumental in writing and reviewing the statistics content in the new *Common Core State Standards for Mathematics*, which will be adopted by most U.S. states and many territories. These standards give statistics a larger role in K–12 mathematics education and place more emphasis on statistical problem solving, conceptual understanding, and reasoning as described in the ASA's *Guidelines for Assessment and Instruction in Statistics Education (GAISE) Report: Pre-K–12 Curriculum Framework* (*www.amstat.org/education/gaise*).

A new publication, *Bridging the Gap Between Common Core State Standards and Teaching Statistics* (*www.amstat.org/education/btg*), is designed to help educators bring statistics into elementary and middle school classrooms. The ASA also published *Making Sense of Statistical Studies* (*www.amstat.org/education/msss*), which is a series of investigations to provide upper middle-school or high-school students valuable experience in designing and analyzing statistical studies.

In addition to the publications the ASA maintains, the website STEW, Statistics Education Web (*www.amstat.org/education/stew*), contains peer-reviewed lesson plans tied to the new standards.

Free webinars on K–12 statistics education topics are available at *www.amstat.org/education/webinars*. This series was developed as part of the follow-up activities for the Meeting Within a Meeting (MWM) statistics workshop for math and science teachers (*www.amstat.org/education/mwm*). The next MWM statistics workshop and the Beyond AP Statistics (BAPS) workshop (*www.amstat.org/education/baps*) will be held this August in San Diego, California, in conjunction with the Joint Statistical Meetings.

The U.S. version of Census at School is a free international classroom project that engages students in grades 4–12 in statistical problemsolving. Students complete an online survey, analyze their class census results, and compare their class with random samples of students in the U.S. and other participating countries. A number of online webinars and other resources (*www.amstat.org/censusatschool/resources.cfm*) have been made available by the ASA to help educators learn more about the project and how to explore the data. These and other K–12 education efforts of the ASA are described at

Currently leading the way in heightening the public's awareness of statistical science is the Royal Statistical Society (RSS), which is in the midst of the getstats campaign.

Getstats (*www.getstats.org.uk*) focuses on building the UK public's confidence with numbers, data, and statistics. Their strongest focus has been on so-called 'multiplier' audiences, e.g. the media, teachers, members of parliament, and employers. Newspapers, such as *The Guardian* are building the concept of data journalism and exposing a wide audience to statistics through data blogs (*www.guardian.co.uk/news/datablog*).

"The Joy of Stats," an award-winning one-hour documentary presented by Hans Rosling of the Karolinska Institute, has been featured multiple times on BBC4 and BBC2 and is available online at *www.gapminder.org/videos/the-joy-of-stats*.

David Spiegelhalter, the Winton Professor of the Public Understanding of Risk, is also active in efforts to increase statistical literacy. His website, *http://understandinguncertainty.org*, provides numerous useful tools for understanding and interpreting risk. With Mike Aitken at Cambridge, he has developed The Big Risk Test (*www.bbc.co.uk/labuk/experiments/risk*), designed to evaluate the public's feelings about risk, knowledge of risk, and risk-taking behavior. Spiegelhalter has been featured on numerous television shows (ranging from game shows to science shows) and radio programs as part of his efforts. These efforts are critical in attracting new members to our "big tent" of individuals with interests in excellence in statistical research and practice.

www.amstat.org/education/pdfs/EducationResources.pdf. The ASA also offers annual poster and project competitions (*www.amstat.org/education/posterprojects*) for K–12 students that offer opportunities for students to formulate questions and collect, analyze, and draw conclusions from data.

Additional efforts to target children in K–12 (and even earlier) are needed to break down the remaining cultural barriers that discourage certain children, especially young girls, from developing a life-long love of the mathematical sciences. These efforts in statistical education, along with the upcoming educational campaign being planned (tentatively named StatSharp) will help us attract new students to explore our field further through undergraduate and graduate study.

In addition to its educational activities, the ASA is actively working to heighten public awareness of statistics. In April, *Science* published ASA President-elect Marie Davidian and AAAS Statistics Section retiring chair Tom Louis's editorial, "Why Statistics?" highlighting the importance of statistics to science and society and the rapidly growing need for more statisticians. ASA is busy preparing for the International Year of Statistics in 2013 (*www.statistics2013.org*) and hoping for strong involvement from chapters and sections to raise awareness of our field.

The series Statistical Significance (*www.amstat.org/outreach/statsig.cfm*) highlights contributions that statisticians make in informing policy, improving health care, monitoring the environment, and improving national security.

The ASA has been advising Congress on climate change issues with special emphasis on the roles of statisticians in advancing science and informing policy—see Richard Smith's congressional briefing on relevant issues at *www.amstat.org/outreach/climatescience.cfm*.

The recent ASA video contest, "Promoting the Practice and Profession of Statistics," raised enthusiasm for our field; these videos have been viewed over 15,000 times on YouTube.

Members also are encouraged to join the Media Experts list (*www.amstat.org/about/pdfs/ASAMediaExperts.pdf*) to help journalists translate statistical results into lay language.

How can we better raise public awareness of statistics and "energize our future"? Please send your suggestions to ASA Executive Director Ron Wasserstein (*ron@amstat.org*). We look forward to hearing from you! ■

STAT*tr@k*

Traits of a Successful Statistician

Gerald J. Hahn and Necip Doganaksoy

It goes without saying that a successful statistician must have strong analytical and technical skills. Clearly, you need to know and understand statistics—this is, after all, the added value that you uniquely provide. Most statisticians have master's degrees, but some—especially those who plan to go into academia—earn PhDs. Still others might hold, at least initially, an undergraduate degree only. How far to take your training is highly dependent on the specific career path you expect to follow.

You also need to be able to quickly grasp and properly apply complex technical concepts and to carefully examine, absorb, and question what is presented to you. Mathematics provides the foundation of the theory of statistics. You need to like mathematics and be good at it. In school, you will be taught the fundamentals and nitty gritties of statistical methodology. On the job, you often have to bend or extend a particular method to address the problem at hand. This frequently calls for strong mathematical skills.

Agility on the computer is a further technical skill important for successful statisticians. In addition, you will need to rapidly gain an understanding of the application area in which you become involved. Thus, the ability to learn quickly the fundamentals of a field and be conversant in it will help you immeasurably. And being an A student, although far from guaranteeing your success, will surely come in handy when you are looking for a job.

Though strong analytical and technical skills are critical, they alone are far from sufficient to ensure success as a statistician. Various strong personal skills are also needed.

Communications and Related Skills

Your customers, and sometimes even your management, may have little understanding and a limited idea of the potential contributions of statistics and statisticians. This requires you to teach and 'sell' the value of statistics—as well as of yourself.

You must speak the language of your customers—and not expect them to be proficient in yours. Statistical jargon must be avoided. You need to assess others' statistical sophistication and calibrate what you say accordingly. You have to get across key ideas, conclusions, and recommendations succinctly and effectively in one-on-one or small-group settings, more formal presentations, and written communications.

The ability to be quick on your feet is an important part of communicating effectively. This is especially important in such situations as fielding questions from your CEO or agency or department head, or when, as an expert witness, you are under cross-examination or, as a government statistician, informing the media or the general public. And a significant part of being

Editor's Note: These comments are abridged from Chapter 6 of the authors' recent book, *A Career in Statistics.* They are targeted principally at statisticians aiming for a career in business, government, or other application area; however, the characteristics described are also highly desirable for those in academia.

a good communicator is being a good listener.

A genuine interest in others, an outgoing personality, and diplomatic skills are also highly important. So is the ability to network with colleagues with backgrounds and training that may be different from your own.

Ability to Size Up Problems and See the 'Big Picture'

You need to be good at sizing up and diagnosing problems, appreciating their context and broader implications, and assessing their importance. Quoting George Box, "Statisticians must grit their teeth and also become practitioners. Only then will they discover where the truly novel problems are."

Most problems are not well defined or articulated. Occasionally, you may be asked questions that are of little interest to anybody other than the person posing the question. (If this person happens to be your CEO or agency or department head, that automatically makes it an important question.) Or you may be called upon to give your 'statistical blessing' to a *fait accompli*, and an objective evaluation is less than welcome. It is important for you to appreciate such situations and act accordingly—including turning down assignments that might present ethical conflicts.

The ability to size up a problem astutely requires you to be able to rapidly gain an understanding of the underlying politics and have a good nose for gauging management interest and support. This calls for an inquisitive mind and the ability to frame—and the confidence to (politely) ask—fundamental questions that might challenge underlying and often unstated assumptions, as well as listening closely to the answers and any associated nuances. It may also require some independent digging and keen evaluation of your own.

Flexibility

Applied statisticians work in a dynamic environment. The strategic importance of a particular project may be downgraded (or upgraded) at any time due to, say, a change in management or business climate—and such changes are far from infrequent. (One of us worked for 17 managers in the course of a 46-year career in essentially the same organization).

You need to be prepared for things to change abruptly, to anticipate and recognize change, and to have the vigor to roll with the punches. While weighting heavily the demands of your current customers, managers, and projects, you need to frame your work to make it as robust to change as possible. This requires a good understanding of the business environment and information—and imagination—to recognize how this environment might change.

Some enjoy change and thrive on it. But it is not everybody's cup of tea.

A Proactive Mindset

Merriam-Webster defines proactive as acting in anticipation of future problems, needs, or changes. The so-called "democratization of statistics"—resulting in today's statisticians being relieved of many routine number-crunching activities—and the dynamic environment make it essential for statisticians to be proactive, and also make it easier. You need to search for opportunities for improvement and identify, assess, and communicate your potential role and contributions. This often calls for out-of-the-box thinking.

Once on a project, a proactive mindset will push you to look at things holistically—and to seek out important aspects of problems and useful and novel ways of addressing them to attain the best possible results.

Persistence

Statistical concepts—because they tend to be 'different' from the norm of deterministic thinking—often require reinforcement at strategically selected times before they take hold. Once on a project, action by others is often needed for you to be able to make meaningful contributions. For example, you typically have to rely on working partners to provide existing data or to collect new information.

You need to persist in driving toward what you believe to be in the best interest of the project and organization, not giving up easily when you are convinced you are on the right track. At the same time, you have to appreciate the fine line between persistence (or tenaciousness) and obstinacy. You must listen carefully to understand why others might think what you are advocating will not work or be practical and consider modifying your ideas while still achieving your major goals.

A Realistic Attitude

You need to focus on both the immediate requirements of the project and the long-term goals of the organization and not let marginal issues divert you. Quoting our colleague Roger Hoerl, "The best business solution is more important than the best statistical solution, and you need to know the difference."

It might seem cool to try out a new method you learned in school, heard about recently, or even developed yourself, but you should do so only to the degree it is relevant and useful for the problem at hand. You may, for example, determine the available data are inadequate to serve the immediate needs of the project and are tempted to apply advanced modeling with the hope that this might provide a rescue. But your time and efforts might be better spent in working instead to procure improved data.

We all derive satisfaction from a job well done. However, in a results-oriented environment, you can be a perfectionist only up to a point. Cost and practical considerations dictate how far to take a project. Those who are not satisfied until they have driven a problem to its ultimate optimal solution need to learn how to

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adjust their thinking to accommodate the practical needs of the problems they encounter.

Enthusiasm and Appropriate Self-Confidence

A prerequisite to making others enthusiastic about what you do is for you to be enthusiastic and have a positive can-do attitude, conveying passion for your work. This calls for a high level of self-confidence.

At the same time, you need to be able to distinguish self-assuredness from arrogance. Not taking yourself too seriously and maintaining a sense of humor are helpful. So is an appreciation of the egos of others.

Even the most successful statisticians—and especially the most resourceful ones—encounter occasional setbacks. You need to be able to cope with these, learn from them, and move forward. On the other hand, if you find yourself consistently not succeeding, you need to take a close and candid look—perhaps with a trusted friend or mentor—at how you go about doing things and what changes you need to make.

Ability to Prioritize, Manage Time, and Cope with Stress

Statisticians frequently work on multiple projects at a time and need to respond to unanticipated crises and requests. This can result in overload work situations. It makes it especially important for you to be able to manage and allocate time efficiently. Unanticipated demands can be better met, and the resulting stress reduced, by scheduling yourself to meet those demands that are known, or can be readily anticipated, with time to spare. You need to be able to prioritize tasks skillfully—based upon their importance, their deadlines, and the time required to do the work—and be ready to reprioritize as the situation changes. And you must learn how to diplomatically say "no" to work you judge unimportant or are unlikely to address successfully, either due to lack of time or technical considerations.

Team Skills

Statisticians frequently work as members of a project team—a mode we strongly advocate. In this capacity, you need to provide important added value to the team and be easy to work with. It might also require you to suppress some of your own aspirations for the sake of team harmony and success.

Leadership Skills

The democratization of statistics has opened up—and, indeed invited exploration of—new opportunities for statisticians to exert leadership, either informally or in a specific role such as project team leader or manager of an organization. It requires you to have the strong personal, organizational, and visionary skills that characterize successful leaders.

Ability to Properly Apply and Adapt Knowledge

Knowledge of statistics is not enough. You need to integrate and synthesize what you know and apply it appropriately to the problem at hand. In a classroom setting, you expect the problems at the end of a chapter to deal with topics discussed within the chapter. But on the job, you do not know to which chapter of which book, if any, the problem you are facing pertains. You will have to select—from your arsenal of knowledge—the appropriate technical approach to use for a given application. Frequently, you need to tailor existing methods—or develop an appropriate new method and, perhaps, the associated software—to fit the problem.

Passion for Lifelong Learning

Our profession is constantly changing, as are the application areas in which you will be involved. You need to have the desire, and be able to take the time, to keep abreast of the latest developments in both.

Concluding Remarks

There have been numerous books and papers, as well as recent STAT*tr@k* articles, about what makes a successful statistician. It is unrealistic to expect any single individual to possess all of the important traits we and others describe. But the more of them you have, the better will be your chances of success. ■

Meeting Within a Meeting

a statistics workshop for K-12 teachers

Mathematics and Science Teachers

(www.amstat.org/education/mwm)

Sponsored by the American Statistical Association (ASA) 2012 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, July 31, and Wednesday, August 1, 2012, 8:00 a.m. to 3:30 p.m.
Place:	San Diego Convention Center, located at 111 West Harbor Drive, San Diego, CA 92101 (workshop meeting room location to be announced)
Audience:	Middle- and high-school 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 the Common Core State Standards, GAISE recommendations, and *NCTM Principles and Standards for School Mathematics*.
Presenters:	GAISE report authors and prominent statistics educators
Format:	Middle-school and high-school statistics sessions
	One-day pass to attend activities at JSM* (statistics education sessions, poster sessions, JSM exhibit hall)
	Activity-based sessions, including lesson plan development
Provided:	Refreshments
	One-day pass to attend the Joint Statistical Meetings
	Lodging reimbursement (up to a specified amount) for teachers from outside the San Diego area
	Handouts
	Certificate of participation from the ASA certifying professional development hours
	Optional graduate credit available
Cost:	The course fee for the two days is $50. **Please 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:	More information and 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. JSM activities include statistics education sessions, posters sessions, and the exhibit hall.

REGISTRATION FORM

2012 ASA Biopharmaceutical Section FDA–Industry Statistics Workshop

September 12–14, 2012 • Marriott Wardman Park—Washington, DC

www.amstat.org/meetings/fdaworkshop

INSTRUCTIONS

1. Print or type all information and retain a copy for your records.
2. Use a separate form for each registrant.
3. Mail form with payment to FDA–Industry Statistics Workshop Registration, 732 N. Washington Street Alexandria, VA 22314. Fax form (credit card only) to (703) 684-2037.
4. Registration form must be received by August 27, 2012, to be processed at the reduced rate. Purchase orders will not be accepted. ASA Federal ID #53-0204661.

Forms Received Without Payment Will Not Be Processed.

ATTENDEE INFORMATION

ASA ID # (if known)

Name

Preferred Name for Badge (if other than first name)

Organization

Address

City State/Province ZIP/Postal Code

Country (non-U.S.)

Phone

Email

In case of emergency, list the name and phone number of the person we should contact (remains confidential).

Emergency Contact's Name _____

Telephone Number _____

❑ Please update my ASA customer contact information with this contact information.

❑ Please exclude my name from the conference attendee roster that will appear on the conference website.

This meeting is ADA accessible.

❑ Please check here if you need special services due to a disability or have food allergies/restrictions and attach a statement regarding your needs.

CANCELLATION POLICY

Cancellations received by August 27, 2012, will be refunded, less a $25 processing fee and less a $10 processing fee for each short course. Cancellations received by September 5, 2012, will be refunded, less a $50 processing fee and less a $15 processing fee for each short course. Requests for refunds received after September 5 will not be honored. All cancellations must be made in writing to *cheryl@amstat.org*, via fax to (703) 684-2037, or mailed to FDA/Industry Statistics Workshop Registration, 732 N. Washington Street, Alexandria, VA 22314.

MEAL PREFERENCE

Lunch on September 13 is included with your workshop registration. Please indicate the roundtable number (see back of form) for your 1st, 2nd, and 3rd choices.

1st____ 2nd____ 3rd____ ❑ Lunch only ❑ Not attending lunch

Select one of the following menu options:

❑ Regular ❑ Vegetarian

REGISTRATION FEES Workshop Fee (required)

	By August 27	August 28–September 5	
❑ Registrant	$270	$295	$_____
❑ Academic (nonstudent)	$230	$255	$_____
❑ Biopharm Section Member	$230	$255	$_____
❑ Government Employee	$130	$155	$_____
❑ Student	$130	$155	$_____

Short Courses—Monday, September 12 *Add-ons to Workshop Fee: $100 each before Aug. 27; $105 each August 27–September 5*

8:30 a.m.–12:00 p.m.

❑ SC1: Recent Adaptive Designs in Phase 2 and Phase 3: Theory and Implementation—*Eva Miller, Paul Gallo, and Anastasia Ivanova* $_____

❑ SC2: Utility-Based Clinical Trial Design and Analysis—*Peter Thall* $_____

❑ SC3: A Sensitivity Analysis Paradigm for Randomized Studies with Missing Data—*Daniel Scharfstein* $_____

1:30 p.m.–5:00 p.m.

❑ SC4: Classical, Adaptive and Bayesian Clinical Trial Simulations: Concepts, Execution and Implementation—*Sandeep Menon, Mark Chang, and Gheorghe Doras* $_____

❑ SC5: Statistical Evaluation of Diagnostic Performance Using ROC Analysis—*Kelly Zou, Alicia Toledano, and Gregory Campbell* $_____

❑ SC6: Meta-Analysis with Multivariate Data—*Christopher Schmid* $_____

TOTAL FEES: $_____

PAYMENT

❑ Check/money order payable to the **American Statistical Association** *(in U.S. dollars on U.S. bank)*

Credit Card ❑ American Express ❑ Discover ❑ MasterCard ❑ VISA

Card Number

Expiration Date Security Code

Name of Cardholder

Authorizing Signature

Roundtable Luncheon Topics
Thursday, September 13

Adaptive and Other Study Designs

TL1: Practical Issues with Non-Randomized Study Designs, Pablo Bonangelino, FDA/CDRH

TL2: Logistics and Implementation of Adaptive Trial Designs, Eva Miller, ICON Clinical Research

TL3: Sample Size Re-estimation: Concepts and Applications, Emelita Wong, PPDI

TL4: Innovated Design for First-Time in Human Study, Yu Lou, GlaxoSmithKline

TL5: Randomized Withdrawal Design, Ha Nguyen, Pfizer Inc.

Bayesian Methods and Designs

TL6: Evaluation of Type 1 Error in Bayesian Medical Device Trials with Informative Priors, Greg Maislin, Biomedical Statistical Consulting

TL7: Bayesian Application in Registration Trials with Confirmatory Secondary Endpoints, Yi-wen Ma, Janssen Pharmaceutical Companies of Johnson & Johnson

TL8: Bayesian Method, Adaptive Design, and Enhanced Quantitative Decision in Early Drug Development, Tianhui Zhou, Pfizer Inc.

Biomarkers/Biosimilars

TL9: Biomarker Qualification in Drug Safety, Aloka Chakravarty, U.S. Food and Drug Administration

TL10: Evaluation of the Risk Prediction Performance of Biomarkers and Tests, Yuying Jin, FDA/CDRH

TL11: Selection and Validation of Biomarkers and Surrogate Endpoints, Abel Eshete, FDA

TL12: Statistical Issues in the Approval of Biosimilars, Eric Chi, Amgen Inc.

Collaboration/Guidelines

TL13: Awareness and Implementation of CDISC Standards, Vipin Arora, Abbott Laboratories

TL14: PhD, MS Statisticians: Roles and Responsibilities in the Pharmaceutical Industry, Nfii Ndikintum, PharmaNet/i3

TL15: Application of EMA Bioequivalence Guidelines (2010) in a Global Setting, James Lee, Daiichi Sankyo Pharma Development

TL16: New FDA cUTI Draft Guidance and Design Implications, Prasanna Ambati, PPD, Inc.

Comparative Effectiveness/PROs

TL17: How Can Quantitative Methods and Tools Be Applied by Industry and Regulators to Determine a Medicine's Value to Payers, Providers, and Patients?, Amit Bhattacharyya, GlaxoSmithKline

TL18: Industry Perspective on Practical Issues of PROs, Sheryl McCoy, Amgen

Diagnostics/Devices

TL19: Statistical Issues in Companion Diagnostics, Estelle Russek-Cohen, FDA CBER/OBE Division of Biostatistics

TL20: Statistical Design and Analysis Issues for Cardiovascular Medical Device Studies, Gary Kamer, FDA/CDRH/OSB/DBS

TL21: Evaluating Performance Measures Where Patients Contribute a Measure in a Temporal Sequence, Bipasa Biswas, FDA

TL22: Methods for Developing and Validating Diagnostic Tests, Lori Christman, STATKING Clinical Services

TL23: Design Considerations for Pivotal Clinical Investigations for Medical Devices, Alicia Toledano, Statistics Collaborative, Inc.

TL24: Diagnostic Imaging Studies, Lakshmi Vishnuvajjala, FDA/CDRH

TL25: Missing Data Due to the Lack of a Reference Standard in Evaluation of Diagnostic Medical Devices, Qin Li, FDA/CDRH

TL26: Clinical Trials for Devices with Aesthetic Indications, Phyllis Silverman, FDA/CDRH

Drug Development

TL27: Innovation Session: Redesigning the Pharmaceutical R&D Process, Dennis Cosmatos, ReSearch Pharmaceutical Services, Inc.

TL28: Bridging to Bridges in Vaccine Development: Managing the Drift in Multi-Serotype Vaccines, Jonathan Hartzel, Merck & Co., Inc.

TL29: Challenges and Opportunities in Small to Mid-Size Pharmaceutical Companies, Mike Colopy, UCB Pharma

TL30: First-Time-in-Human Trials: Everything but the Kitchen Sink?, Sharon Murray, GlaxoSmithKline

Futility

TL31: Role of Futility Analysis in an Unblinded Interim Analysis, Peter Hu, Janssen Pharmaceutical Companies of Johnson & Johnson

TL32: Futility Analyses, Anthony Rodgers, Merck & Co., Inc.

Methodology

TL33: Practices on Benefit-Risk Assessment, Hong Laura Lu, FDA/CDRH

TL34: Missing Data: Bridging the Gap Between Industry and Academia, Herbert Thijs, Hasselt University

TL35: Statistical Issues in Oncology Clinical Trials: Progression-Free Survival and Overall Survival, Ying Wan, Janssen Research & Development LLC, Johnson & Johnson

TL36: Agreement Assessment Among Medical Devices or Raters, Lawrence Lin, Baxter International Inc.

TL37: The Actual Practice of Randomization Management, Michael Collins, ICON Clinical Research

TL38: Assessment of the Dose Proportionality of PK Parameters in SRD or MRD Trials and the Evaluation of the Steady State: What Is the Common Practice?, Jingtao Wu, TAKEDA Global Development and Research Center

TL39: Analysis of change from baseline data in the presence of covariate-by-treatment interaction, Jihao Zhou, Allegan Pharmaceuticals Inc.

TL40: Meta-Analysis Based on Post-Hoc Selected Subgroups in Evaluating Overall Treatment Effect, Jagadish Gogate, Symbiance, Inc.

TL41: Experiences with Zero-Inflated Poisson or Negative Binomial Models in Clinical Trials or Other Types of Studies for Regulatory Submission Purposes, Stan Lin, FDA/CBER; Samir Lababidi, FDA/CBER; Ross Pierce, FDA/OBRR

TL42: What Do We Do When the Sites Are Not Poolable?, Jack Zhou, FDA/CDRH

TL43: Covariate Adjustment: Should Study Center Be Included?, Caiyan Li, Baxter Healthcare

TL44: Statistical Modeling to Evaluate Long-Term Persistence, Jason Martin, Merck & Co., Inc.

TL45: Mediators and Moderators in Randomized Clinical Trials, Christine Blasey, Corcept Therapeutics and Stanford University

TL46: Issues in Clinical Trials with a Time Lag Between Randomization and Initiation of Treatment, Chunrong Cheng, FDA/CBER

TL47: Precision Study for a Qualitative Assay, Tie-Hua Ng, FDA/CBER

TL48: Sensitivity Analyses for Progression-Free Survival in Supporting Labeling Claim, Yun Wang, HHS/FDA

Noninferiority

TL49: Challenges in the Designs of Noninferiority and Equivalence Trials with Clinical Endpoints, Madhuja Mallick, Merck Research Laboratories

TL50: Considerations in Defining the Primary Analysis Population for Noninferiority Studies, Ralph DeMasi, Janssen R&D, Johnson & Johnson

Propensity Scores

TL51: Subgroup Matching by Propensity Score in Randomized Trials, Xuena Wang, Amgen Inc.

TL52: Safety Assessment Using Propensity Score Methods in Observational Database Cohort Studies, Janelle Charles, U.S. Food and Drug Administration

Safety

TL53: QT/QTc Evaluation in Early Development Studies, Jaya Natarajan, Janssen R&D, Johnson & Johnson

TL54: Analysis of Safety Events of Interest in Placebo-Controlled Clinical Trials, Elena Polverejan, Janssen R&D, Johnson & Johnson

Veterinary

TL55: Using R in Veterinary Medicine Research, Louis Luempert, Novartis Animal Health

JSM 2012 Session Highlights

Steve MacEachern, 2012 JSM Program Chair

The California Tower in Balboa Park, San Diego, California
iStockphoto

The technical program for the Joint Statistical Meetings (JSM) 2012 will start on the afternoon of Sunday, July 29, and continue through the morning of Thursday, August 2. In any one of the 13 regular time slots during this period, you have well over 40 sessions to choose from, including invited sessions, organized by the JSM program committee; topic-contributed sessions, organized by participants; and contributed sessions.

In addition, there are 350 invited and contributed poster presentations. The posters, located near the exhibits, will have high visibility. Strolling through the posters is a great way to meet a few people and have a conversation about the work the presenters have done. New this year are the "video posters" that will afford a few of the presenters with a more flexible format for presentation, including dynamic graphical displays. The poster sessions run Monday through Wednesday.

Every year since 2002, JSM has featured late-breaking sessions on recent topics of broad interest. For 2012, I am pleased to include the following session in the program:

The Role of Statisticians in Health Care Reform. The U.S. health care system faces many challenges, including cost, quality, access, equity, and safety. Improving the system is particularly challenging because the "system" is not a system, but rather a complex, shifting amalgam of delivery models and financing mechanisms. What can statisticians contribute to health care reform? John Adams, Marc Elliott, Arlene Ash, and others will tell us on July 30 at 2:00 p.m.

Introductory Overview Lectures (IOLs) are an always-popular offering. They provide an orientation to important and timely statistical topics. This year's IOLs include the following:

Causal Inference in Statistics: A Gentle Introduction (July 29 at 4:00 p.m.)
Judea Pearl will provide a tutorial on the principles and tools of causal inference, with an emphasis on the role the counterfactual argument plays in establishing causality.

Adaptive Design and Personalized Medicine: The Future is Now (July 30 at 8:30 a.m.)
Don Berry will enlighten us with a description of the role adaptive trials can play in increasing the information gained from a trial and in personalizing treatment for subgroups of patients.

Sparsity (July 31 at 8:30 a.m.)
David Donoho will tell us about the importance of sparsity in the data-rich world in which we live and how modern statistical methods capture the concept to improve analyses. We also will be treated to glimpses into a broad selection of applications.

Statistics and Climate (August 1 at 8:30 a.m.)
Peter Guttorp will provide an introduction to the methods used to assess evidence on global warming. He also will provide an introduction to basic climate models, tell us of their connection to data, and describe how the models relate to decisionmaking.

Additional highlights of the program include the following:

Memorial sessions for Martha Aliaga (July 29 at 4:00 p.m.), Tom Ten Have (July 30 at 2:00 p.m.), David Blackwell (July 31 at 8:30 a.m.), and Paul Meier (August 1 at 2:00 p.m.).

Keynote speakers: The Deming Lecturer is C. F. Jeff Wu (July 31 at 4:00 p.m.), and the COPSS Fisher Lecturer is Rod Little (August 1 at 4:00 p.m.). Also, don't forget to see the ASA President's Invited Address (July 30 at 4:00 p.m.) and ASA Presidential Address and Awards (July 31 at 8:00 p.m.).

Invited journal sessions; the **Noether Award** session; sessions organized by **ASA chapters**, **committees**, and **interest groups**; and several invited sessions organized by **outside societies** such as the Asociación de Estadística Mexicana, the International Association of Survey Statisticians, Mu Sigma Rho, and the International Society of Bayesian Analysis.

There are many other interesting and unusual sessions taking place every day and at all times. The tough part is deciding which sessions to attend and keeping track of them. Visit the JSM online program at *www.amstat.org/meetings/jsm/2012/onlineprogram* and use the "My Program" tool to compile your own schedule. Enjoy the meetings and when you meet session organizers and section program chairs, be sure to thank them for their hard work. Also, if you bump into ASA staff members, thank them as well for their hard work in putting the meeting together. Assembling a program with well over 600 sessions and 3,500 speakers has been complicated, but these terrific people have made it all possible. ■

More Things to Do in San Diego

Following are a few more things to do in San Diego during JSM, as endorsed by the ASA local area committee. For even more, visit the convention and visitor's bureau at *www.sandiego.org*.

Theater

San Diego Summer Pops Concerts Outdoors at Embarcadero Marina Park South

July 29 - Dave Koz at the Movies

August 3–4 - Broadway Rocks!

August 5 - Burt Bacharach - What's It All About

For more information, visit w*ww.sandiego.org/listing/Visitors/3680* or call the San Diego Symphony at (619) 235-0804.

San Diego Civic Theater

July 24–29 - "Memphis"

www.sandiegotheatres.org/eventstickets/eventscalendar.cfm?year=2012&month=7

For more information, call (619) 570-1100 (ticket information) or (619) 615-4000 (administration).

Moonlight Stage Productions
(45-minute drive)

July 25–August 11 - "Fiddler on the Roof"

For more information, visit *www.moonlightstage.com* or call (760) 724-2110.

La Jolla Playhouse
(20-minute drive)

July 10–August 5 - "The Nightingale"

For more information, visit *www.lajollaplayhouse.org/nightingale* or call (858) 550-1010.

Old Globe Theater

July 27–August 2 - "God of Carnage"

July 7–August 12 - "Divine Rivalry"

June 10–September 30 - "As You Like It

June 3–September 29 - "Richard III"

June 17–September 25 - "Inherit the Wind"

For more information, visit *www.theoldglobe.org*.

San Diego Junior Theatre

July 27–August 5 - "Footloose"

For more information, visit *http://juniortheatre.com/shows/2011-2012/footloose*.

SCUBA Diving

HMCS Yukon (destroyer escort) and others in Wreck Alley

For more information, visit *www.sandiego.org/article_set/Visitors/13/103*.

Various Activities

www.sandiego.org/nav/Visitors/EventCalendar?begin=2012-07-22&end=2012-08-13&category=&keywords= ■

Marie Davidian

William D. Nordhaus

Marie Davidian, who is full professor of statistics at North Carolina State University, was recently selected as the 2011–2012 D.D. Mason award winner.

The award is made in recognition of Davidian's years of outstanding service to the department and the statistics profession. Within the department, Davidian is especially known for her outstanding teaching and research, giving leadership to the biostatistics program, and for mentoring graduate and undergraduate students and junior faculty. More broadly, she is known for her research and innumerable contributions to serve and promote the field of biostatistics and statistics in general. Her service to the profession includes coordinating and executive editor of *Biometrics*, former president of ENAR, and current president-elect of the ASA.

The D.D. Mason Faculty Award is named for David D. Mason, who served as professor of statistics at NCSU from 1953 until he retired in 1981. For information about the award and Mason, visit *www.stat.ncsu.edu/information/admin/mason-award.php*. ■

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

William D. Nordhaus, Sterling Professor of Economics at Yale University, has been selected to receive the 2012 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.

Nordhaus is recognized for his contributions to the measurement of environmental-economic accounts and economic welfare and his active participation with the U.S. statistical system. Nordhaus will be honored at events hosted by the three sponsors of the award: The Washington Statistical Society, the National Association for Business Economics, and the Business and Economic Statistics Section of the American Statistical Association.

Nordhaus is best known for his work in measuring economic welfare and the impact of the environment on gross domestic product (GDP), which challenged the statistical systems in the United States and other countries to think more broadly about measurement issues. His research has had a major impact on economic statistics throughout the world by providing a conceptual and empirical basis for his measures. His 1972 monograph with the late James Tobin, "Is Growth Obsolete?" was among the first efforts to provide measures of economic welfare that differ from traditional measures of production, such as the GDP. That effort inspired substantial work to expand GDP and economic measurement to better record the effect of growth on economic welfare. In the United Nation's (UN) 1993 System of National Accounts, satellite accounts were added to accommodate such extensions to the national accounts, and the UN published a handbook on developing integrated economic and environmental accounts.

In 1994, in "Integrated Economic and Environmental Satellite Accounts," the Bureau of Economic Analysis (BEA) published a U.S. version of these accounts, and, in 2009, the Stiglitz-Sen-Fitoussi report on better measuring economic welfare was published, igniting another round of national and international efforts to provide measures of economic welfare. In contrast to the recommendations from some of these efforts, Nordhaus has expressed skepticism about incorporating "happiness" measures into economic accounting systems.

Building on his own work, Nordhaus chaired the 1999 National Academy of Sciences panel and co-edited its report, *Nature's Numbers: Expanding the National Accounts to Include the Environment*, which recommended an empirical framework to integrate environmental and other nonmarket activity into GDP. He played a key role in a subsequent National Academies panel whose report, *Beyond the Market*, extended his study of environmental statistics to areas such as education and health. For a 2004 National Bureau of Economic Research (NBER) volume, *A New Architecture for the U.S. National Accounts*, he contributed an essay on applying a nonmarket account in the

"new architecture" proposed in the volume, an essay that has already had a major impact on statistical practice on national accounting in the United States and many other countries. Most recently, in the May 2011 issue of the *American Economic Review*, he and his coauthors published "Environmental Accounting for Pollution: Methods with an Application to the United States Economy."

Nordhaus has coupled his research with extensive involvement in and leadership of the statistical system. He currently serves as a member of the BEA Advisory Committee and served as its first chair. As chair, he was extremely active in working with BEA on innovations, including better integrated, more accurate, and timelier industry accounts; more comprehensive measures of stock options and pensions; the expansion of services data by BEA and the U.S. Census Bureau; and a wide range of new price indexes.

Nordhaus also has had significant influence on the statistical system through his work at the National Academy of Sciences. In addition to his work on environmental and nonmarket accounts, he was instrumental in the preparation of major studies on price and cost-of-living indexes and on the measurement of time use, both of which led to significant changes in federal statistical programs. The Bureau of Labor Statistics developed new ways to measure expenditures and prices for the medical sector and, in part because of his involvement in the time-use workshop, then launched the American Time Use Survey. Nordhaus's other work for the academy included improving environmental statistics and increasing our understanding of the economics of climate change.

Nordhaus has served on academy oversight committees, such as the Committee on National Statistics and the Advisory Board for the Division on Behavioral and Social Sciences and Education, where he has worked to advance the relevance of U.S. economic statistics. In addition, he was the founder and chair of the American Economic Association's Committee on Economic Statistics, which focuses the attention of professional economists on data issues. For example, he has been a member and senior advisor of the Brookings Panel on Economic Activity since 1972, is on the research staff of the NBER, and served on the Congressional Budget Office's Panel of Economic Experts. Although his research has focused on economic growth and environmental accounting, he has worked on the economics of climate change. He has developed economic approaches to global warming, including the construction of integrated economic and scientific models to determine an efficient path for coping with climate change.

Donald M. Leebern III (left), CEO of Georgia Crown Distributing, presents Karl Peace with the 2012 University System Board of Regents' Hall of Fame Alumni Award during a ceremony held March 31 in Atlanta, Georgia.

Nordhaus has received numerous honors for his research work and public service, including membership in the National Academy of Sciences, the American Academy of Arts and Sciences, and the Swedish Academy of Engineering. In 2004, the American Economic Association named him a distinguished fellow. ■

Jiann-Ping Hsu College of Public Health of Georgia Southern University (GSU) biostatistics professor and Georgia Cancer Coalition Distinguished Cancer Scholar **Karl Peace** was presented with the 2012 University System Board of Regents' Hall of Fame Award on March in Atlanta, Georgia. Peace was one of three to receive the honor.

The award was established by the board of regents to honor those who exemplify superb leadership and support of higher education in Georgia. Recipients are nominated by their alma mater and selected by an external

panel based on their outstanding accomplishments and contributions to their institution.

"We are extremely proud of Karl Peace for being recognized with this very prestigious award," said Brooks Keel, president of Georgia Southern. "Karl has made a tremendous impact in the field of public health through his generous endowment of the Jiann-Ping Hsu College of Public Health (JPHCOPH). He has always been and continues to be the type of faculty member, scientist, philanthropist, and humanist that we all strive to be."

Peace was recognized during the Board of Regents' Salute to Education, an event hosted by the University System of Georgia Foundation, Inc. The event brings together college and university presidents, regents, trustees, and corporate and political leaders to celebrate and recognize those who bring excellence to public higher education in Georgia.

Peace, who serves as a senior research scientist and professor of biostatistics in the JPHCOPH, holds a PhD in biostatistics from the Medical College of Virginia, an MS in mathematics from Clemson University, a BS in chemistry from Georgia Southern College, and a health science certificate from Vanderbilt University.

Peace is the recipient of numerous other citations and awards, including several distinguished meritorious service awards from the American Public Health Association, Drug Information Association, Southwest GA Cancer Coalition, Deming Conference, and International Chinese Statistical Association (ICSA). In addition, his contributions to education, public health, and drug development have been cited by both the Georgia and U.S. Houses of Representatives.

Peace has a lengthy record of philanthropy to education, having created 21 endowments at five institutions. In addition, he founded the GSU Center for Biostatistics and Public Health Library and brought the central office of the ICSA to the JPHCOPH. Peace is also founder and chair of the internationally renowned Biopharmaceutical Applied Statistical Symposium, which generates funds to support graduate work in biostatistics.

His work has been published extensively in pharmaceutical, statistical, medical, and scientific literature. He is the author or co-author of more than 150 articles and 10 books and the editor or reviewer of several peer-reviewed journals, including the founding editor of the *Journal of Biopharmaceutical Statistics*, now in its twenty-second year. Peace has given more than 150 invited presentations worldwide in the scientific, statistical, medical, and pharmaceutical arenas. ■

Snehalata Huzurbazar, associate professor of statistics at the University of Wyoming, has accepted the position of deputy director of the Statistical and Applied Mathematical Sciences Institute (SAMSI) for the next two years. Huzurbazar will take a leave of absence from the University of Wyoming while she performs her duties at SAMSI, starting on July 9. She also will be a member of the research faculty at North Carolina State University in the statistics department.

"We are very impressed with Snehalata's background and think she will bring a fresh perspective to the development of SAMSI's programs and will be instrumental in our education and outreach efforts," remarked Richard Smith, director of SAMSI.

Snehalata Huzurbazar

In her new position, Huzurbazar will help administer SAMSI programs and help develop future programs. She also will be involved with education and outreach efforts and work on staff and personnel issues.

Huzurbazar earned her bachelor's degree from Grinnell College in 1984, her master's degree in economics from Vanderbilt University in 1988, and her PhD in statistics from Colorado State University in 1992. She was an assistant professor at the University of Georgia from 1992–1995 and has been at the University of Wyoming since 1995. At UW, she has been an affiliate of the Science and Mathematics Teaching Center since 2003. She was also an adjunct professor of women's studies from 2003–2008.

Huzurbazar spent time at SAMSI last year as a visiting research fellow in the analysis of object data program. One reason she was attracted to the deputy director's position was because SAMSI is the only National Science Foundation institute that explicitly includes a focus on statistics. She is particularly interested in encouraging young people to pursue careers in statistics and mathematical sciences.

"Making an impact on outreach is really important to me.

We often have trouble getting people into the mathematical sciences. I think we need to do a better job attracting students into mathematical sciences and inform them about various career options," said Huzurbazar.

Much of Huzurbazar's recent time has been spent building collaborations with colleagues in a variety of disciplines, ranging from evolutionary bioinformatics to the geosciences, broadly defined. In evolutionary bioinformatics, she is working on the statistical issues surrounding the data generation pipelines. "Genomes for various species are sequenced. Then, the data from the sequenced genomes are run through all kinds of computer programs in order to obtain what is used as the final 'data' that biologists model. We've been concerned that we are not taking into account the effects of the criteria used within these different pipelines on the final analyses and inferences that researchers obtain," said Huzurbazar.

In the geosciences, she works with colleagues from glaciology, sedimentology, chemical and petroleum engineering, and restoration ecology. She spent 2004–2005 at the Institute of Arctic and Alpine Research in Boulder, Colorado. Some of the chemical engineering and sedimentology work involves modeling distributions of sand particles or water-in-oil emulsion particles using particle or grain-size distributions. The glaciology problems are about modeling three-dimensional data obtained from boreholes in glaciers to study how glaciers deform over time.

For more information about SAMSI, visit *www.samsi.info* or follow SAMSI on Twitter at @NISSSAMSI. ■

Obituaries

Douglas Carroll

Douglas Carroll, 72, of Warren, New Jersey, passed away on June 7, 2011. Born in Philadelphia, Pennsylvania, Carroll earned his bachelor's degree in mathematics and psychology at age 19 from the University of Florida, Gainesville. He met his wife when they were both students at the university.

After graduating Phi Beta Kappa, he won a fellowship to Princeton, where he earned his master's and doctoral degrees with major areas in mathematical experimental psychology and psychometrics and a minor in mathematics. At Princeton, he was elected to Sigma Xi scientific honor society.

After Carroll completed his doctorate, he started at Bell Labs, but also served on faculty as an assistant professor or adjunct professor at a number of universities, including New York University, Baruch College of the City University of New York, the University of California at Irvine and at San Diego, and the University of Pennsylvania.

Carroll retired from Bell Telephone Laboratories in 1989, after 25 years of research. He was then appointed by Rutgers University to the distinguished post of board of governors chair professor in business with a joint appointment in psychology. He also was visiting research professor at the Institute for Mathematical Behavioral Sciences, University of California at Irvine, until 1993.

Carroll served as associate editor of *Psychometrika* from 1973–2003, and he was on the editorial boards of the *Journal of Classification* and *Journal of Marketing Research*. He was editor of *Methodika*, as well as consulting editor to both the *Journal of Experimental Psychology: Human Perception and Performance* and *Journal of Experimental Psychology: General*.

In 2010, Carroll was given a lifetime achievement award at the 75th anniversary conference of the Psychometric Society. He is survived by his wife, Sylvia, and their two sons, Gregory and Stephen. ■

Robert S. Eckley

Illinois Wesleyan President Emeritus Robert S. Eckley died April 15. He was 90 years old.

Born in Kankakee, Illinois, Eckley grew up in Peoria, Illinois, and served in the Coast Guard Reserve as an engineering officer. He earned his bachelor's from Bradley University, his master's in business administration from the University of Minnesota, and a master's and doctorate in economics from Harvard University.

Eckley served as a teaching fellow at Harvard from 1948–1949 and was an industrial economist for the Federal Reserve Bank of Kansas City from 1951–1954. He also served as manager of the business economics department of Caterpillar Tractor Co. in Peoria from 1954–1968. Eckley was president of Illinois Wesleyan from 1968–1986 and a member of the American Economic Association, National Association of Business Economists, and the ASA.

He is survived by his wife of 65 years—Nell B. (Mann) Eckley—four children, and five grandchildren. Memorials may be directed to Illinois Wesleyan University or Wesley United Methodist Church.

To read more about Eckley's life, visit the Illinois Wesleyan website memorial page at *www.iwu.edu/news/2012/04-president-eckley.html*. ■

sectionnews

Bayesian Statistical Science

The Section on Bayesian Statistical Science will sponsor five invited sessions, seven topic-contributed sessions, 15 contributed sessions, five P.M. roundtables, and three Continuing Education courses during this year's Joint Statistical Meetings in San Diego, California.

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

Continuing Education Courses

- Introduction to Bayesian Methods and Software for Data Analysis, taught by Bradley P. Carlin, University of Minnesota, and Laura A. Hatfield, Harvard Medical School
- Bayesian Time Series Analysis and Forecasting: Models and Methods, taught by Raquel Prado, University of California at Santa Cruz, and Mike West, Duke University
- Bayesian Clinical Trials, taught by Scott Berry and Kert Viele, Berry Consultants

Invited Sessions

- Recent Advances in Markov Chain Monte Carlo, organized by Jingchen Liu, Columbia University
- Bayesian Spatial Temporal Modeling of Large Environmental Data Sets, organized by Montserrat Fuentes, North Carolina State University
- Graphical Models: Current Developments and Future Directions, organized by Adrian Dobra, University of Washington
- New Developments in Bayesian Nonparametrics, organized by David Dunson, Duke University
- Bayesian Longitudinal Data Analysis, organized by Lurdes Y.T. Inoue, University of Washington

Topic-Contributed Sessions

- Bayesian Methods in Time-to-Event Data and Other Applications, organized by Sanjib Basu, Northern Illinois University
- Advances in Genomics, organized by Lynn Kuo, University of Connecticut
- Implementing Bayesian Methods in Drug Development, organized by Fanni Natanegara, Eli Lilly and Company
- SBSS Student Paper Competition Winners, organized by Marina Vannucci, Rice University
- Bayesian Joint Modeling of Patient-Reported Outcomes and Survival Information, organized by Bradley P. Carlin, University of Minnesota
- Bayesian Modeling: Application in Clinical Trial Design and Analysis, organized by Huyuan Yang, Millennium Pharmaceuticals
- Bayesian Methods with Applications to Health Sciences, organized by Saman Muthukumarana, University of Manitoba

P.M. Roundtables

- Bayesian Methods in the Pharmaceutical Industry, led by Vladimir Dragalin
- Bayesian Methods in Genetic and Environmental Epidemiology, led by Bhramar Mukherjee
- Bayesian Models for High-Throughput Omics Data, led by Yuan Ji
- Bayesian Nonparametrics Methods: Practical Issues and Current Frontiers, led by David Dahl
- Issues in Adaptive Bayesian Dose-Finding Designs, led by Tom Braun

Visit the JSM website at *www.amstat.org/meetings/jsm/2012* for details about these sessions and to register. For section details, visit *http://magazine.amstat.org/?cat=17*.

The section is also looking for invited session or short course ideas for JSM 2013, to be held in Montréal, Québec, Canada. Contact Peter Thall at *rex@mdanderson.org* if you have any.

Biometrics

The Biometrics Section will sponsor four short courses and six invited sessions during JSM 2012 in San Diego, California.

Continuing Education Courses

- Statistics Analysis with Missing Data, taught by Roderick Little and Trivellore Raghunathan
- Smoothing Splines: Methods and Applications, taught by Yuedong Wang
- Statistical Methods for Genome-Wide Association, Copy Number Variants, and Rare Variants Analysis, taught by Hongzhe Li and Wei Pan

- Design and Analysis of Biomarker Studies for Risk Prediction, taught by Tianxi Cai and Yingye Zheng

Invited Sessions

- Recent Methodology Developed for the Design of Early-Phase Clinical Trials, organized by Thomas Braun
- Statistical Challenges and Innovative Solutions for Correlated Data, organized by Peiyong (Annie) Qu
- Statistical Methods for High-Dimensional Complex-Structured Object Data, organized by Veera Baladandayuthapani
- Biomarkers for Risk Prediction, Disease Detection, and Treatment Effect Estimation: Statistical Issues, organized by Layla Parast
- Shrinkage Estimation: Unifying Different Perspectives, organized by Bhramar Mukherjee
- New Methodological Advances in Network-Based Analysis of Omics Data, organized by Ali Shojaie

To view the JSM 2012 online program or register for a course, visit *www.amstat.org/meetings/jsm/2012*.

The section also needs ideas for JSM 2013 invited sessions and Continuing Education courses. Anyone interested in organizing an invited session or who has ideas for one should contact Wei Sun at *wsun@bios.unc.edu*. Submit your ideas for short courses to Donglin Zeng at *dzeng@email.unc.edu*.

Invited session ideas are also welcome for the ENAR 2013 conference, which will take place March 10–13, 2013, in Orlando, Florida. Send your ideas to Daniel Scharfstein at *dscharf@jhsph.edu*.

For detailed section news, visit *http://magazine.amstat.org/?cat=17*.

Quality and Productivity

The Quality and Productivity Section (Q&P) will offer four topic-contributed sessions and sponsor three contributed sessions at the 2012 Joint Statistical Meetings in San Diego. You can find all of the Q&P-sponsored and cosponsored sessions by searching the JSM online program at *www.amstat.org/meetings/jsm/2012/onlineprogram*.

Topic-Contributed Sessions

- Modern Reliability and Structured Health Management
- Model Robust Design: Why Not More Impact?
- Flexible and Powerful Approaches to Process Optimization Using Bayesian Methods
- Some Current Research Problems in Statistical Process Control

Contributed Sessions

- Advances in Statistical Process Control
- Methods of Reliability and Life Testing
- Experiments: Design, Modeling, and Analysis

Cosponsored Sessions

- Recurrent Events and Interval Censored Data
- Reliability Bayesian Modeling in Physical Sciences and Engineering
- Risk Management: Classical or Bayesian
- Designed Experiments
- Computer Experiments
- Risk Model Selection and Extreme Values

Statistics and the Environment

Members of the Section on Statistics and the Environment have tentatively scheduled the section's business meeting/mixer for July 30 during the Joint Statistical Meetings in San Diego, California. Catch up with old friends and meet some new. Food and drinks will be provided, along with some surprises.

If you have ideas about topics for JSM 2013 invited sessions, contact Veronica Berrocal at *berrocal@umich.edu*.

Survey Research Methods

The final section-sponsored webinar of the spring series will be presented by Frauke Kreuter of the University of Michigan this month. His topic is "Paradata to Monitor and Analyze Survey Processes." To register, visit *www.amstat.org/sections/SRMS/webinar.cfm*.

Additionally, the section will sponsor a number of sessions and poster presentations at JSM 2012. To view a complete list, visit the online program at *www.amstat.org/meetings/jsm/2012/onlineprogram*. For detailed section news, visit *http://magazine.amstat.org?cat=17*. ■

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

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

›› Indicates events posted since the previous issue

2012

July

1–4—IMS Asia Pacific Rim Meetings, Tsukuba, Japan
For more information, visit *http://ims-aprm2012.org/index.html* or contact Runze Li, Department of Statistics, Penn State University, University Park, PA 16802-2111; (814) 865-1555; *rli@stat.psu.edu*.

3–5—Leeds Annual Statistical Research (LASR) Workshop, Leeds, United Kingdom
For more information, visit *www1.maths.leeds.ac.uk/statistics/workshop/lasr2012* or contact Kanti Mardia, University of Leeds, School of Mathematics, Woodhouse Lane, Leeds, InternationalLS2 9JT, UK; *workshop@maths.leeds.ac.uk*.

3–6—International Statistical Ecology Conference (ISEC) 2012, Oslo, Norway
For more information, visit *www.cees.uio.no/news/2010/isec2012.html* or contact Carl Schwarz, Statistics and Actuarial Science, Burnaby, British Columbia, V5A1S6, Canada; (778) 782-3376; *cschwarz@stat.sfu.ca*.

3–6—Fields Institute International Symposium on Asymptotic Methods in Stochastics, in Honor of Miklós Csörgo's Work, Ottawa, Canada
For more information, visit *www.fields.utoronto.ca/programs/scientific/12-13/stochastics* or contact Rafal Kulik, 585 King Edward Ave., Ottawa, International K1N6N5, Canada; *rkulik@uottawa.ca*.

4–6—World Congress on Engineering 2012, London, United Kingdom
For details, visit *www.iaeng.org/WCE2012* or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK, Hong Kong; (852) 3169-3427; *wce@iaeng.org*.

4–6—Statistical Inference in Complex/High-Dimensional Problems, Vienna, Austria
For details, visit *www.univie.ac.at/inference2012* or contact Hannes Leeb, Department of Statistics, Universitaetsstr. 5/3, Vienna, International 1010, Austria; +43 1 4277 38620; *hannes.leeb@univie.ac.at*.

9–12—Australian Statistical Conference 2012, Adelaide, Australia
For more information, visit *www.sapmea.asn.au/conventions/asc2012* or contact Paul Sutcliffe, P.O. Box 213, Canberra, International 2616, Australia; 82988179; *sutters@bigpond.net.au*.

9–14—8th World Congress in Probability and Statistics, Istanbul, Turkey
For details, visit *www.worldcong2012.org* or contact Aycil Yesilirmak, Ayazmaderesi Cad. Karadut Sok. No: 7, Dikilitas, Istanbul, International 34349, Turkey; +90 212 381 46 00; *aycilyesilirmak@figur.net*.

»9–27—Summer Institute in Statistical Genetics, Seattle, Washington
For more information, visit *www.biostat.washington.edu/SISG* or contact Bruce Weir, Box 357232, Seattle, WA 98155; (206) 221-7947; *bsweir@uw.edu*.

10–13—Workshop on Algorithms for Modern Massive Data Sets (MMDS 2012), Stanford, California
For more information, visit *mmds.stanford.edu* or contact Alexander Shkolnik, 475 Via Ortega, Stanford, CA 94305; *ads2@stanford.edu*.

16–18—International Symposium in Statistics (ISS) 2012 on Longitudinal Data Analysis Subject to Outliers, Measurement Errors, and/or Missing Values, St. John's, Newfoundland
For more information, visit *www.iss-2012-stjohns.ca* or contact Brajendra Sutradhar, Elizabeth Avenue, St. John's, Newfoundland A1C5S7, Canada; (709) 864-8731; *bsutradh@mun.ca*.

16–20—MBI BioSciences Problem-Solving Workshop (PSW@MBI), Columbus, Ohio
For more information, visit *www.mbi.osu.edu/2012/stgrdescription.html* or contact Rebecca Martin, 1735 Neil Ave., Columbus, OH 43210; (614) 688-3519; *rebecca@mbi.osu.edu*.

16–20—27th International Workshop on Statistical Modeling, Prague, Czech Republic
For more information, visit h*ttp://iwsm2012.karlin.mff.cuni.cz* or contact Arnost Komarek, Sokolovska 83, Praha 8, International 18200, Czech Republic; 00420221913282; *komarek@karlin.mff.cuni.cz*.

16–20—LinStat 2012 Conference and the 21st International Workshop on Matrices and Statistics, IWMS 2012, Bedlewo, Poland
For details, visit *http://linstat2012.au.poznan.pl/index.html* or contact Katarzyna Filipiak, Wojska Polskiego 28, Poznan, Non US/CAN Province 60637, Poland; *linstat@up.poznan.pl*.

16–24—Industrial Math/Stat Modeling Workshop for Graduate Students, Raleigh, North Carolina
For more information, visit *www.samsi.info/workshop/2012-industrial-mathstat-modeling-workshop-graduate-students-july-16-24-2012* or contact Karem Jackson, 19 T.W. Alexander Drive, RTP, NC 27709; (919) 685-9324; *admin@samsi.info*.

23–26—Joint Meeting of y-BIS and jSPE, Lisbon, Portugal
For details, visit *http://ybis-jspe.com* or contact Paulo Rodrigues, Department of Mathematics, Faculty of Sciences and Technology of UNL, Caparica, International 2829-516, Portugal; 00351936110338; *paulocanas@gmail.com*.

26–28—18th ISSAT International Conference on Reliability and Quality in Design, Boston, Massachusetts
For details, visit *www.issatconferences.org* or contact Conference Secretary, P.O. Box 1504, Piscataway, NJ 08855; *rqd@issatconferences.org*.

***28–8/2—2012 Joint Statistical Meetings, San Diego, California**
For more information, visit *www.amstat.org/meetings/jsm/2012/index.cfm* or contact ASA Meetings, 732 N. Washington St., Alexandria, VA 22314; (888) 231-3473; *meetings@amstat.org*.

August

5–8—IEEE Statistical Signal Processing Workshop 2012, Ann Arbor, Michigan
For more information, visit *www.ssp2012.org* or contact Clayton Scott, 1301 Beal Ave., Ann Arbor, MI 48109; *contact@ssp2012.org*.

6–10—Ten Lectures on Statistical Climatology, Seattle, Washington
For more information, visit *www.statmos.washington.edu/wp/?p=42* or contact Peter Guttorp, Box 354322, Seattle, WA 98195-4322; *peter@stat.washington.edu*.

6–17—Summer Program on Computational Advertising, Research Triangle Park, North Carolina
For details, visit *www.samsi.info/workshop/computational-advertising-august-6-17-2012* or contact Karem Jackson, 19 T.W. Alexander Drive, RTP, NC 27709; (919) 685-9324; *admin@samsi.info*.

***19–23—33rd Annual Conference of the International Society for Clinical Biostatistics, Bergen, Norway**
For details, visit *www.iscb2012.info* or contact Inger Lise Ravnanger, Torgalmenning 1a, P.O. Box 947 Sentrum, Bergen, International N-5808, Norway; +47 55553655; *mail@kongress.no*.

20–22—Measurement, Design, and Analysis Methods for Health Outcomes Research, Boston, Massachusetts
For more information, visit *ccpe.sph.harvard.edu/MDA* or contact Anabel Cordero, Landmark Center, Park Street, Boston, MA 02115; (617) 384-8692; *contedu@hsph.harvard.edu*.

26–31—XXVIth International Biometric Conference, Kobe, Japan
For more information, visit *www.secretariat.ne.jp/ibc2012* or contact Toshiro Tango, Secretariat of IBC2012 C/O Convention Linkage, Inc., 11F PIAS TOWER 3-19-3 Toyosaki Kita-ku, Osaka, International 531-0072, Japan; *tango@medstat.jp*.

September

3–7—Summer School ABS12 on Stochastic Modelling for Systems Biology, Pavia, Italy
For details, visit *www.mi.imati.cnr.it/conferences/abs12.html* or contact Fabrizio Ruggeri, Via Bassini 15,

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

Milano, International 20133, Italy; +39 0223699532; *abs12@mi.imati.cnr.it*.

9–12—SAMSI: Statistical and Computational Methodology for Massive Data Sets Opening Workshop, Research Triangle Park, North Carolina
For more information, visit *www.samsi.info/workshop/program-statistical-and-computational-methodology-massive-datasets-opening-workshop-septemb* or contact Karem Jackson, 19 T.W. Alexander Drive, RTP, NC 27709; (919) 685-9324; *admin@samsi.info*.

9–13—ENBIS-12, Ljubljana, Slovenia
For more information, visit *www.enbis.org* or contact Irena Ograjensek, University of Ljubljana, Faculty of Economics, Kardeljeva pl. 17, Ljubljana, International 1000, Slovenia; +386 1 5892 505; *irena.ograjensek@ef.uni-lj.si*.

19–21—WCBF's Using Lean Six Sigma to Prevent Avoidable Readmissions, Boston, Massachusetts
For details, visit *www.wcbf.com/quality/5112* or contact Selina Mirpuri, 30 S. Wacker Drive, 22nd Floor, Chicago, IL 60606; (800) 959-6549; *selina.mirpuri@wcbf.com*.

24–27—Structure and Uncertainty, Bristol, United Kingdom
For more information, visit *www.sustain.bris.ac.uk/ws-structure* or contact Andrieu C, University Walk, Bristol, International BS8 1TW, UK; *c.andrieu@bristol.ac.uk*.

27—19th Federal Forecasters Conference, Washington, DC
For details, visit *http://ffc2012.eventbrite.com* or contact Jeff Busse, 12201 Sunrise Valley Drive, MS987, Reston, VA 20192; (703) 648-4914; *jbusse@usgs.gov*.

»28—Lagakos Alumni Award Lecture, Boston, Massachusetts
For details, visit *www.hsph.harvard.edu/departments/biostatistics/announcements/the-lagakos-distinguished-alumni-award-established.html* or contact Shaina Andelman, 655 Huntington Ave., Building 2, 4th Floor, Boston, MA 02115; (617) 432-7449, *sandelma@hsph.harvard.edu*.

October

»*4–5—Fall Technical Conference Student Grants Competition, St. Louis, Missouri
For more information, visit *cba.ua.edu/ftc2012* or contact Timothy Robinson, Department of Statistics, University of Wyoming, Laramie, WY 82071-3332; (307) 766-5108; *tjrobin@uwyo.edu*.

»*5–7—International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, North Carolina
For more information, visit *www.uncg.edu/mat/aisc* or contact Sat Gupta, 317 College Ave., Petty Building, Department of Mathematics and Statistics, Greensboro, NC 27412; (336) 334-6285; *sngupta@uncg.edu*.

17–19—WCBF's Using Lean Six Sigma to Improve Patient Safety, Miami, Florida
For details, visit *www.wcbf.com/quality/5115* or contact Selina Mirpuri, 30 S. Wacker Drive, 22nd Floor, Chicago, IL 60606; (800) 959-6549; *selina.mirpuri@wcbf.com*.

»18–20—Carthage Meeting on Statistics, Hammamet, Tunisia
For more information, visit *http://rcs2012.atistat.com* or contact Hlel Yemen, Institut of Statistic and Information Analysis, Ariana, International 2037, Tunisia; +216 55 313 452; *rcs2012@atistat.com*.

24–26—World Congress on Engineering and Computer Science 2012, San Francisco, California
For more information, visit *www.iaeng.org/WCECS2012* or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK, Hong Kong; (852) 3169-3427; *wcecs@iaeng.org*.

»*31–11/3—2012 International Conference on Methods for Surveying and Enumerating Hard-to-Reach Populations, New Orleans, Louisiana
For details, visit *www.amstat.org/meetings/h2r/2012* or contact Kathleen Wert, 732 N. Washington St., Alexandria, VA 22314; (703) 684-1221; *h2r2012@amstat.org*.

November

7–9—WCBF's Using Lean to Improve Hospital Bed Management and Patient Flow, Orlando, Florida
For details, visit *www.wcbf.com/quality/5114* or contact Selina Mirpuri, 30 S. Wacker Drive, 22nd Floor, Chicago, IL 60606; (800) 959-6549; *selina.mirpuri@wcbf.com*.

8–11—AMATYC Annual Conference, Jacksonville, Florida
For more information, visit *www.amatyc.org* or contact Frank Goulard, 12000 SW 49th Ave., Portland, OR 97219; (971) 722-4781; *amatyc@amatyc.org*.

17—Info-Metrics and Nonparametric Inference, Riverside, California
For details, visit *www.american.edu/cas/economics/info-metrics/workshop/workshop-2012-november.cfm* or contact Amos Golan, American University, 4400 Massachusetts Ave., NW, Kreeger 104, Washington, DC 20016; (202) 885-3770; *info-metrics@american.edu*.

December

***2–7—68th Annual Deming Conference on Applied Statistics, Atlantic City, New Jersey**
For more informaion, visit *www.demingconference.com* or contact Walter Young, 16 Harrow Circle, Wayne, PA 19087; *demingchair@gmail.com*.

27—Eighth International Triennial Calcutta Symposium on Probability and Statistics, Kolkata, India
For more information, visit *http://triennial.calcuttastatisticalassociation.org* or contact Arindam Sengupta, 35 Ballygunge Circular Road, Department of Statistics, University of Calcutta, Kolkata, International 700019, India; +91-9433590336; *caltri8@gmail.com*. ■

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

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

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

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

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

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

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

District of Columbia

■ The National Committee for Quality Assurance (NCQA) seeks a director, analysis to provide day-to-day management in analysis. Responsibilities include significant operational, budgetary, and supervisory responsibility and will direct all internal analytic projects for NCQA, including accreditation and HEDIS data, as well as externally funded projects. This position will also provide statistical and methodological support for the development and refinement of NCQA projects and products. To apply: *https://home2.eease.adp.com/recruit/?id=2011651*. NCQA recruits, hires, trains and promotes individuals, and administers any and all personnel actions, without regard to race, color, religion, creed, national origin or ancestry, sex, marital status or disability, in accordance with applicable laws.

Iowa

■ Coordinator of Statistical Consulting and Director of the Survey and Behavioral Research Services. Experience with statistical consulting, statistical software packages, and managing a data service center. MS with six years experience or PhD with three years experience. Submit application letter, CV, and contact information for three references to *www.iastatejobs.com*, under vacancy 120347. More information at *www.stat.iastate.edu*. Iowa State University is an Equal Opportunity/ Affirmative Action employer.

Missouri

■ Monsanto is seeking a statistician regulatory to join our team in St. Louis, MO. The statistician will provide key statistical support needed to demonstrate the efficacy and safety of Monsanto's biotechnology and chemical agricultural products. PhD in statistics or biostatistics or MS in statistics or biostatistics required. At least one year of statistical consulting experience is needed. Visit us online at *jobs.monsanto.com/statistician* to apply. EOE.

New York

■ Position available for master's-level biostatistician. The successful applicant will engage in wide variety of collaborative projects with medical investigators and statisticians. Projects involve the design and analysis and publication of clinical, laboratory or cancer prevention research.

Qualifications include a master's degree in biostatistics/statistics, excellent programming skills, proficiency in database manipulation, and good verbal and written communication skills. Email cover letter and CV to *EPIBIOSTATS@mskcc.org*. *www.mskcc.org*. Memorial Sloan-Kettering Cancer Center is an equal opportunity and affirmative action employer committed to diversity and inclusion in all aspects of recruiting and employment. All qualified individuals are encouraged to apply.

Ohio

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

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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 4621BR

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

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Professor and Chair

Department of Statistics

The University of Nebraska-Lincoln

The University of Nebraska-Lincoln invites applications for the position of Professor and Chair, Department of Statistics. This is a full-time, 12-month appointment responsible for the academic leadership of the research, teaching and service activities in the Department of Statistics as well as for the professional development of the faculty and staff. In this position, you will have a primary focus on the continued development of the Department as an internationally recognized program in statistics along with the opportunity and expectation for developing a high level, internationally recognized campus-wide bioinformatics and computational biology initiative. The Department Chair reports to the Dean of the College of Arts and Sciences (CAS), and deans of the College of Agricultural Sciences and Natural Resources (CASNR) and the Agricultural Research Division (ARD) within the Institute of Agriculture and Natural Resources (IANR) on matters related to the department.

To succeed in this role, you will need an earned doctoral degree in Statistics or closely related field; must meet qualifications for appointment as a tenured professor; and have a record of excellent interpersonal, organizational, and leadership skills. Previous administrative experience is preferred.

If this sounds like the job for you, please access the web site http://employment.unl.edu. Search for requisition number 120174. Complete the faculty academic administrative information form. Attach a letter of application, curriculum vitae, and contact information for three professional references.

Review of applications will begin May 15, 2012, and will continue until the position is filled or the search is closed.

The University of Nebraska has an active National Science Foundation ADVANCE gender equity program, and is committed to a pluralistic campus community through affirmative action, equal opportunity, and dual careers.

Texas

■ The Department of Preventive Medicine and Community Health at the University of Texas Medical Branch is recruiting a tenure-track professor or associate who will also serve as the director of the office of biostatistics to play an active leadership role in their teaching, research, and service responsibilities. Applicants must have a PhD in biostatistics or applied statistics. Submit letter of interest and CV to *trgroh@utmb.edu*. UTMB Health is an equal opportunity, affirmative action institution that proudly values diversity. Candidates of all backgrounds are encouraged to apply.

■ Assistant Professor - Quantitative Applied Ecology. PhD required in natural resources related field or in statistics with proven application to natural resources and complex biological systems. Work with faculty that have a strong emphasis in applied ecology and an international reputation in use of quantitative stochastic methods in natural resource systems. Review of applicants will begin May 1. Contact *mark.wallace@ttu.edu* or (806) 742-2841. Texas Tech University. EOE.

International

■ The Skolkovo Institute of Science and Technology (Skolkovo Tech) seeks candidates for tenured and tenure-track faculty positions in science, technology, and innovation to begin September 1, 2012, or thereafter. Skolkovo Tech is an innovative, new, private university located just outside Moscow, Russia. Please visit *http://web.mit.edu/sktech/faculty-positions* for more information. EOE.

■ Tohoku University in Japan is inviting applications for a research fellow position that is for two years (no extension). All fields of statistics will be considered. There is no teaching duty for this position. Knowledge of Japanese is not required. For more information, visit *www.econ.tohoku.ac.jp/econ/koubo/RF.htm*. EOE. ■

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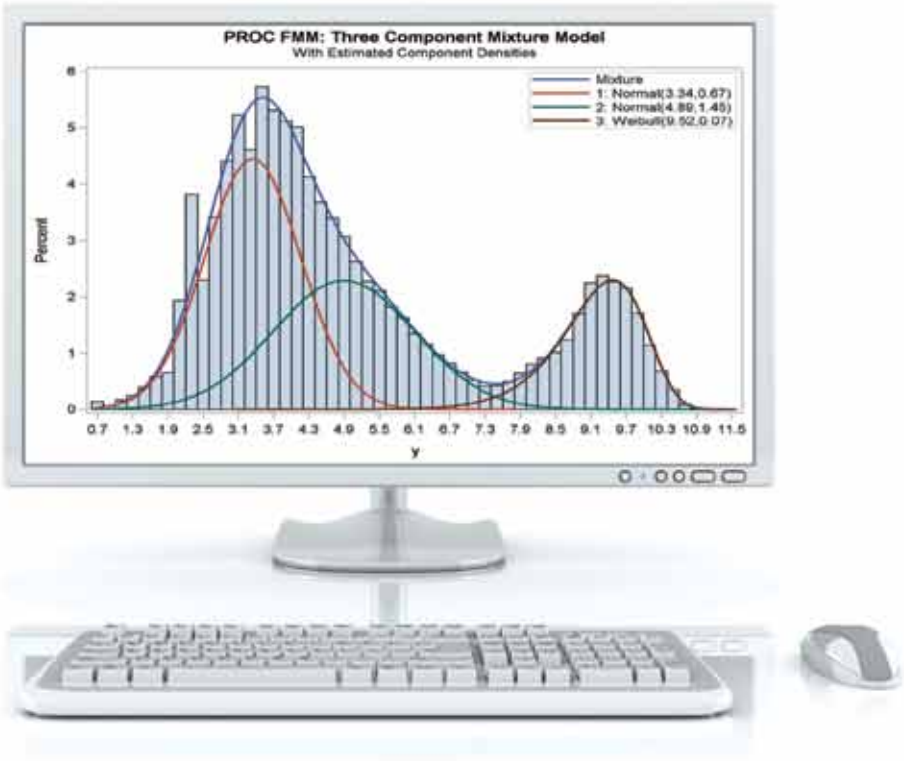

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