

January 2013 • Issue #427

AMSTATNEWS

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

INTERNATIONAL YEAR OF **STATISTICS**

to Increase Visibility of Profession

ALSO:

Academic Salary Survey

Big Data: A Perspective from
the BLS

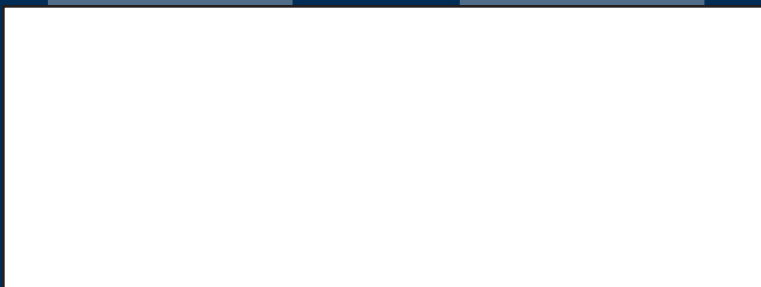
Montréal: A Bit of History



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BONUS

International Year
of Statistics poster
included in centerfold!



**StatSoft®***Making the World More Productive™*

To: CEOs of US Software Companies
 From: Paul Lewicki, CEO, StatSoft, Inc.
 Date: October 22, 2012
 Re: Aid for European Struggling Economies

Dear Colleagues,

As some of you may know, StatSoft has launched a program to offer free Enterprise Business Analytics software to struggling companies in Greece, Portugal, and Spain with the intent to help the economy in these developed and, until only recently, thriving nations, where now 25% of the population cannot afford the most basic necessities such as adequate nutrition or health care.

I invite you to join this initiative, which will not only reduce human suffering, but also have global, long-term benefits of reducing the risk to the Euro and the global economic system.

In our (software) industry, we are in a unique position to help tremendously those companies that are now in the paradoxical situation where (a) their highly educated workforce and developed infrastructure is prepared to greatly benefit from software designed to increase productivity and international competitiveness, but (b) their lack of credit prevents them from making any investments and acquiring the critical tools (software) that would radically increase their chances for a quick recovery.

These companies need not only the Advanced Analytics software that StatSoft is providing; they also need software for database management, enterprise resource planning, factory automation, and many other software tools and solutions.

The anticipated (caused by this program) loss of revenue for our industry from these cash strapped nations will be – in the case of most midsize software companies – limited to just a few million dollars; but, the “Return” on this small “Investment” in terms of the social and global benefits is virtually priceless given the depth of that economic calamity.

I have had discussions with my counterparts at several large software companies. While all of them understood the benefits, they raised concerns regarding the significant and unbudgeted cost involved in supporting this initiative, but there are a number of creative ways in which these costs can be reduced. We at StatSoft have developed some of them, and we are happy to share our ideas with you.

Also, we do not recommend that the free software offer be unconditional (e.g., multinational companies are excluded from the StatSoft program), and your company should include its own limitations. The time to act is now; if we wait until the next fiscal year, it may be simply too late.

I am looking forward to hearing from you and working with you on this initiative where every party involved will be a real winner.

Paul Lewicki

Paul Lewicki, CEO
StatSoft, Inc.

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AMSTATNEWS

JANUARY 2013 • ISSUE #427

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Amstat News welcomes news items and letters from readers on matters of interest to the association and the profession. Address correspondence to Managing Editor, *Amstat News*, American Statistical Association, 732 North Washington Street, Alexandria VA 22314-1943 USA, or email amstat@amstat.org. 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.

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ADVERTISING: advertise@amstat.org

WEBSITE: <http://magazine.amstat.org>

Printed in USA © 2013
American Statistical Association



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

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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.



Mason

Contributing Editor

Robert L. Mason is an industrial statistician at Southwest Research Institute, where he has worked for more than 37 years. He is an institute analyst, which is the highest technical rank at the institute. He is also a past-president of the ASA and a Fellow of both the ASA and American Society for Quality.

25 SCIENCE POLICY Big Data: A Perspective from the BLS

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.



Horrigan

Contributing Editor

Michael W. Horrigan is the associate commissioner in the Office of Prices and Living Conditions at the Bureau of Labor Statistics (BLS). With a doctorate in economics from Purdue University, he has held a variety of senior positions at BLS since he began his career there in 1986.

Online Articles

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

Large Scale Data Inference

The second **Carl Morris Honorary Symposium** on Large-Scale Data Inference took place on October 18, 2012. The symposium—organized by Social & Scientific Systems—explored the intersection of statistics and data visualization and centered on the question, “Can we believe what we see?” To view pictures and read more about the event, visit <http://magazine.amstat.org/blog/2013/01/01/carl-morris-honorary-symposium>.

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.

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

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Post Doc: A Unique Opportunity

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



Hedlin

Contributing Editors

Haley Hedlin earned her PhD from The Johns Hopkins University Department of Biostatistics in 2011 after graduating with a BA in mathematics (concentrations in statistics and linguistics) from St. Olaf College in 2006. Her research interests include developing statistical methods for neuroscience data.

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Not Just a New Year ... An International Year of Statistics!

As I sit down to begin work on my first President's Corner column, the November election has just taken place. Articles and blogs focusing on the results and what they mean for the next four years abound. However, almost equally plentiful are those heralding the triumph of Nate Silver, author of *The New York Times* FiveThirtyEight blog, whose dead-on, state-by-state predictions of the presidential election outcome have commentators across the political spectrum debating whether "geeks with statistical models" have rendered the gut instincts of pundits who have dominated the airwaves for the past year hopelessly (and perhaps thankfully) obsolete.

"Nate Silver-Led Statistics Men Crush Pundits in Election," proclaims a headline from *Bloomberg Businessweek*. Several articles attempt to explain Silver's integration of polling data with statistical modeling to produce simulation-based predictions and characterize their uncertainty, and others laud the use of data-driven statistical analysis in journalism.

Whatever our individual affiliations—Republican or Democrat, frequentist or Bayesian—we statisticians could not have asked for a more potent popular spotlight on our discipline. FiveThirtyEight and the accuracy with which the methods used by Silver, Drew Linzer, and others predicted the presidential election outcome have captured the curiosity of the public and press about the power of data and statistics like never before. As a recent Associated Press article in *The Wall Street Journal* noted, all of this attention has "made statistics sexy again."

And the timing couldn't be better! As we usher in 2013, the 174th year of our association, we also welcome the International Year of Statistics



Marie Davidian

(Statistics2013), a year-long, worldwide celebration and recognition of the contributions of our discipline. First conceived and developed by a group of leaders of statistical societies across the globe (and coinciding with the 250th anniversary of Bayes Theorem), the International Year of Statistics has expanded to involve more than 1,200 participating organizations, including professional societies, universities, research institutes, government agencies, and businesses worldwide. All are dedicating this year to promoting the importance of statistical science to fellow scientists, the business community, the media, governments, policymakers, students at all levels, and the public.

Members of the International Year of Statistics Steering Committee—consisting of representatives from several statistical societies and including ASA Executive Director Ron Wasserstein and past-president Sastry Pantula—have been working tirelessly over the past few years to spearhead activities and encourage this phenomenal level of participation.

... consider ways you and your organization can join this worldwide effort to enhance the visibility of statistics and statisticians.

Throughout 2013, the public face of the celebration will be www.Statistics2013.org. The website features extensive informational and educational materials for the public, media, and teachers worldwide, which will be updated regularly. Participating organizations can link to the main website and take advantage of these and other resources in their own promotional campaigns, and, likewise, the website serves as a portal to activities developed locally by these organizations.

Of course, the ASA has planned its own initiatives throughout 2013. Look for Statistics2013 updates and promotions all year long on our website and in the ASA E-News. This year's Joint Statistical Meetings theme is "Celebrating the International Year of Statistics," and many of our ASA sections have organized sessions aligned with it. Taylor & Francis, publisher of our ASA journals, will raise awareness of Statistics2013 through features such as monthly statistics-related promotional campaigns, interviews with our editors, and International Year of Statistics activities at conferences. And *Amstat News* will put the spotlight on the celebration in each issue in a special International Year of Statistics section during 2013.

A capstone International Year of Statistics event is tentatively scheduled for November. A workshop devoted to the future of the statistical sciences will be held in London. Like the 2002 workshop that led to the 2004 "Report on the Future of Statistics," published in *Statistical Science*, this event will bring together statisticians from government, industry, and academe from across the globe to examine recent developments, future directions, and challenges in statistical research from an international perspective and document the findings.

Interested in learning more? Visit www.Statistics2013.org frequently. And check out Wasserstein's article on Statistics2013 on Page 18.

With the U.S. election drawing attention to our field worldwide in an unprecedented way, we all have an extraordinary opportunity to build on this momentum and make Statistics2013 a watershed

event in raising awareness about how statistics affects all aspects of society. If you are already involved in Statistics2013 activities through your participating organization or the ASA, fantastic! If not, I encourage you to consider ways you and your organization can join this worldwide effort to enhance the visibility of statistics and statisticians.

In fact, one way you can participate right now is to enter the ongoing contest soliciting videos illustrating the positive impact of statistics on society and the power of statistical thinking. Top entries will be posted on www.Statistics2013.org throughout the year. The deadline is February 28; visit the website for details.

As ASA president and with input from the ASA Board of Directors, I have had the opportunity to develop three initiatives for 2013 based on elements of our strategic plan. Two of these speak directly to the goals of Statistics2013.

The first establishes a workgroup to conceive of and undertake steps by which the ASA can advance the visibility of statistics and statisticians among our fellow scientists, targeting the American Association for the Advancement of Science (AAAS), the world's largest general scientific society (see <http://magazine.amstat.org/blog/2012/12/01/aaas-statistics-u>).

For the second, a workgroup of ASA members committed to training the next generation of statisticians is developing and documenting strategies to raise awareness of the opportunities presented by our field among U.S. students, encourage more U.S. students to pursue graduate training in our field, and promote partnerships among stakeholders focused on achieving these objectives.

Both workgroups have been actively engaged in these efforts. In future columns, I will discuss these initiatives in more detail and provide updates on the progress that has been made.

A third initiative is focused on improving one of the most significant benefits our ASA membership supports: the Joint Statistical Meetings. The ASA Committee on Meetings has proposed a number of innovations to the JSM program to make the meetings more accessible and productive for attendees. At JSM 2013 in Montréal, one of these ideas will be piloted; see Page 31 for more information about the new contributed SPEED sessions.

I am honored to serve as the 108th president of the ASA during the International Year of Statistics, and I look forward to celebrating and raising awareness of our discipline with you throughout Statistics2013. I wish you not only a Happy New Year, but a productive and exciting International Year of Statistics!



Highlights of the November 2012 ASA Board of Directors Meeting

Ron Wasserstein, Executive Director



Promoting the Practice and Profession of Statistics

ASA President Bob Rodriguez conducted his final meeting as board chair, leading everyone through a forward-looking agenda guided by the ASA's strategic plan. The board met November 16–17 at the ASA Office in Alexandria, Virginia. As always at the final meeting of the board, new members were present as part of their orientation. Here are the highlights of the meeting:

- Treasurer Keith Ord presented his regular report on the status of the ASA's finances and investment portfolio. The organization has a healthy balance sheet; 2012 has been good financially for the ASA, and investments have, in general, continued to recover value.
- The board received the report of a panel on the future of ASA publications. Members of the panel made a number of preliminary recommendations. Over the coming months, articles in *Amstat News* will present various aspects of the report and seek feedback from the membership.
- The board had a discussion about the policies for access to journal articles prior to their official publication in a journal.
- Philadelphia was selected as the site for JSM 2020. Other future JSM sites are Montréal (2013), Boston (2014), Seattle (2015), Chicago (2016), Baltimore (2017), Vancouver (2018), and Denver (2019). The board also considered other JSM matters regarding fees and fee waivers in special circumstances. In addition, the board discussed the means by which other associations can become "special partners" in JSM. JSM currently consists of

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Rod Little (3rd year Vice President)

Mary Mulry (2nd year Vice President)

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John Bailer (2nd year Council of Sections Representative)

Janet Buckingham (1st year Council of Sections Representative)

Tom Short (3rd year Council of Chapters Representative)

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Nick Horton (1st year Council of Chapters Representative)

Ray Chambers (International Representative)

David Banks (Publications Representative)

Keith Ord (Treasurer)

Ron Wasserstein (Executive Director)

five founding organizations and four special partners. See www.amstat.org/meetings/jsm/2013/index.cfm.

- As always, the board heard reports from the Council of Sections Governing Board and Council of Chapters Governing Board. A new section, the Mental Health Statistics Section, was chartered to begin January 1. The Council of Sections is trying to find ways

2013 ASA Board of Directors

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Mary Kwasny (1st year Council of Chapters Representative)

Ray Chambers (International Representative)

David Banks (Publications Representative)

Keith Ord (Treasurer)

Ron Wasserstein (Executive Director)

to share best practices among sections. A new chapter also has been formed, the Orange County/Long Beach Chapter.

- The board received final reports from the 2012 strategic workgroups:
 - The In-Reach Workgroup, which is developing materials to improve communication to members about the ASA's activities, has completed its work. Materials on a variety of ASA-related topics will be made available to members soon, along with information about how to use them.

- The Career Success Factors Workgroup reported on the progress of developing programs for four success areas it has identified: presentation skills, influence skills, personality training and team building, and career planning. The workgroup is officially completed, but development and delivery of materials in these four areas is ongoing.
- The 2012 Education Workgroup reported a set of seven recommendations regarding outcomes for terminal master's degree programs. Feedback on these recommendations will be widely sought through *Amstat News* and other means.
- The board received the annual report of the Education Council. Rod Little and Roxy Peck updated the board on the activities of the committees within the council. The annual reports of the councils provide a key mechanism for the board and the many ASA committees to stay in touch with each other.
- Steve Pierson, ASA director of science policy, reported on advocacy and outreach activities of the ASA. See www.amstat.org/policy/index.cfm for details. Providing feedback to the National Science Foundation on the structure of support for the statistical sciences within NSF is an important current activity.
- The board devoted considerable time to a review and refresh of the ASA's Strategic Plan (www.amstat.org/about/strategicplan.cfm). The plan has proven to be extremely helpful to the board, and particularly the presidents, in guiding decisions.
- Ron Wasserstein updated the board on the activities under way in preparation for the International Year of Statistics (<http://statistics2013.org>).
- The board continued its discussions of how to improve the visibility of statistics, developing some areas of strategic focus. More will be reported on these activities as details are worked out.

The board next meets April 5–6, 2013, at the ASA Office in Alexandria, Virginia. ■

Academic Salary Survey

Keith Crank

Table 1 provides salary information for full-time statistics faculty, separated according to type of institution. Table 2 provides salary information based on type of department. (Biostatistics faculty are not included in either of these tables.) All the quantiles in these two tables are based on nine-month salaries and are rounded to the nearest \$100. Information about biostatistics faculty and nonfaculty statisticians and biostatisticians in academic institutions will be provided in a future issue.

Table 1—2012–2013 Salaries of Academic Statisticians Based on Type of Institution

Institution Type	Title	Years in Rank	Count	1st Quartile	Median	3rd Quartile	90th Percentile
College	Assistant Professor	0 +	10	\$ 58,500	\$63,300	\$ 64,800	NA
	Associate Professor	0 +	18	\$ 60,600	\$68,400	\$ 80,000	NA
	Professor	0 +	27	\$ 76,500	\$82,900	\$106,000	\$138,800
Research University	Assistant Professor	0–1	63	\$ 75,000	\$ 82,000	\$ 85,000	\$ 89,600
		2	25	\$ 72,300	\$ 75,500	\$ 84,000	\$ 96,000
		3	23	\$ 76,800	\$ 81,500	\$ 90,800	\$ 94,300
		4	23	\$ 76,100	\$ 80,500	\$ 86,800	\$ 93,400
		5	30	\$ 72,700	\$ 79,400	\$ 83,500	\$ 86,000
		6 +	19	\$ 67,700	\$ 79,100	\$ 82,500	NA
	Associate Professor	0–1	45	\$ 77,100	\$ 86,300	\$ 92,000	\$ 102,200
		2–3	49	\$ 82,800	\$ 87,400	\$ 93,500	\$ 116,700
		4–5	31	\$ 76,700	\$ 88,000	\$ 99,700	\$ 105,000
		6–8	27	\$ 71,900	\$ 86,500	\$ 93,500	\$ 109,000
		9–12	18	\$ 76,500	\$ 87,600	\$ 99,400	NA
		13 +	24	\$ 70,300	\$ 79,700	\$ 92,200	\$ 101,200
	Professor	0–1	25	\$ 93,800	\$ 103,700	\$ 130,000	\$ 154,500
		2–3	28	\$ 97,000	\$ 101,400	\$ 141,800	\$ 192,700
		4–5	31	\$ 92,100	\$ 112,000	\$ 131,400	\$ 153,400
		6–7	34	\$ 106,600	\$ 125,400	\$ 142,000	\$ 151,800
		8–9	22	\$ 113,400	\$ 135,200	\$ 145,200	\$ 170,000
		10–14	59	\$ 108,700	\$ 126,400	\$ 157,500	\$ 179,000
		15–19	61	\$ 113,200	\$ 137,900	\$ 161,200	\$ 185,000
		20–24	43	\$ 105,700	\$ 124,600	\$ 142,700	\$ 191,600
		25–30	24	\$ 115,000	\$ 131,800	\$ 144,700	\$ 174,500
		31 +	30	\$ 112,200	\$ 144,800	\$ 168,200	\$ 213,300
	Other	0 +	23	\$ 48,800	\$ 60,100	\$ 72,100	\$ 128,800
All	Instructor	0 +	57	\$ 46,400	\$ 55,600	\$ 62,400	\$ 67,800

Table 2—2012–2013 Salaries of Academic Statisticians Based on Type of Department

Department Type	Title	Years in Rank	Count	1st Quartile	Median	3rd Quartile	90th Percentile
Statistics Department	Assistant Professor	0 to 1	50	\$ 76,000	\$82,000	\$ 85,500	\$ 95,000
		2	17	\$ 75,500	\$81,000	\$ 86,100	NA
		3	21	\$ 78,000	\$82,400	\$ 90,800	\$ 94,300
		4	20	\$ 77,700	\$81,800	\$ 86,800	\$ 93,500
		5	23	\$ 75,200	\$80,300	\$ 84,500	\$ 86,400
		6 +	12	\$ 65,100	\$77,800	\$ 92,000	NA
	Associate Professor	0 to 1	34	\$ 82,100	\$88,500	\$ 97,500	\$108,000
		2 to 3	50	\$ 82,800	\$87,200	\$ 93,500	\$115,800
		4 to 5	25	\$ 86,000	\$92,500	\$ 99,700	\$105,000
		6 to 9	22	\$ 76,300	\$89,800	\$ 99,400	\$110,200
		10 +	28	\$ 71,700	\$82,500	\$ 98,300	\$106,000
	Professor	0 to 1	19	\$ 93,800	\$102,400	\$125,000	NA
		2 to 5	54	\$ 96,300	\$110,100	\$138,500	\$183,000
		6 to 10	62	\$113,400	\$131,900	\$149,000	\$166,500
		11 to 15	47	\$110,100	\$136,300	\$159,100	\$197,300
		16 to 20	60	\$113,900	\$131,600	\$160,500	\$180,500
		21 to 25	29	\$108,200	\$126,500	\$161,800	\$213,700
		26 +	41	\$108,000	\$137,200	\$159,000	\$199,100
	Instructor	0 +	47	\$ 47,000	\$ 56,300	\$ 63,100	\$ 67,800
	Other	0 or more	21	\$ 48,800	\$ 65,000	\$ 72,100	\$128,800
Not a Stat Department (but offering a degree in statistics)	Assistant Professor	0 to 2	24	\$ 63,500	\$ 73,200	\$ 79,000	\$ 85,000
		3 or more	20	\$ 64,000	\$ 73,500	\$ 81,200	\$ 82,500
	Associate Professor	0 to 5	24	\$ 72,400	\$ 75,500	\$ 81,000	\$ 87,000
		6 or more	21	\$ 66,000	\$ 76,800	\$ 90,100	\$ 91,500
	Professor	0 to 5	16	\$ 90,700	\$ 99,500	\$116,100	NA
		6 to 10	11	\$ 83,000	\$108,700	\$132,900	NA
		11 to 20	15	\$104,900	\$119,700	\$130,600	NA
		21 or more	14	\$108,500	\$124,600	\$145,400	NA
	Instructor or Other	0 or more	9	\$ 42,000	\$ 49,800	\$ 58,000	NA
In a Department that does not offer a degree in statistics or biostatistics	Assistant Professor	0 or more	6	NA	\$ 62,500	NA	NA
	Associate Professor	0 or more	8	\$ 57,400	\$ 62,800	\$ 80,800	NA
	Professor	0 or more	16	\$ 62,800	\$ 78,900	\$ 98,600	NA

Table 3—2012–2013 Salaries of Full-Time Statistics Faculty in Statistics Departments, by Gender

Department Type	Title	Years in Rank	Gender	Count	1st Quartile	Median	3rd Quartile
Statistics Department	Assistant Professor	0–1	Male	33	\$73,400	\$ 80,000	\$ 84,600
			Female	17	\$82,000	\$ 85,000	\$ 89,600
		2	Male	8	\$74,800	\$ 80,000	\$ 85,000
			Female	6	NA	\$ 83,000	NA
		3	Male	12	\$76,800	\$ 81,700	\$ 92,500
			Female	8	\$79,000	\$ 82,000	\$ 84,500
		4	Male	12	\$77,700	\$ 80,700	\$ 83,400
			Female	4	NA	\$ 78,300	NA
		5	Male	15	\$73,500	\$ 79,600	\$ 83,500
			Female	6	NA	\$ 78,800	NA
		6 +	Male	4	NA	\$ 68,900	NA
			Female	5	NA	\$ 79,100	NA
	Associate Professor	0–1	Male	15	\$79,500	\$ 86,100	\$ 94,000
			Female	13	\$82,100	\$ 86,400	\$ 92,000
		2–3	Male	30	\$84,900	\$ 87,900	\$ 97,700
			Female	16	\$79,000	\$ 83,600	\$ 87,200
		4–5	Male	17	\$77,400	\$ 92,500	\$102,200
			Female	7	NA	\$ 91,400	NA
		6–9	Male	15	\$74,500	\$ 87,600	\$ 96,000
			Female	5	NA	\$ 90,000	NA
		10 +	Male	22	\$69,400	\$ 80,000	\$ 98,500
			Female	6	NA	\$ 90,000	NA
	Professor	0–1	Male	16	\$98,000	\$105,600	\$127,500
			Female	3	NA	NA	NA
		2–5	Male	42	\$96,300	\$112,000	\$147,900
			Female	6	NA	\$ 98,500	NA
		6–10	Male	44	\$112,800	\$130,100	\$145,500
			Female	13	\$128,600	\$148,000	\$152,000
		11–15	Male	32	\$113,200	\$136,400	\$158,600
			Female	12	\$106,000	\$134,500	\$174,600
		16–20	Male	50	\$114,600	\$131,600	\$161,200
			Female	5	NA	\$157,300	NA
		21–25	Male	27	\$108,200	\$126,500	\$174,500
			Female	1	NA	NA	NA
		26 +	Male	35	\$105,200	\$137,200	\$168,200
			Female	3	NA	NA	NA

We continue to obtain gender information on the salary survey. For faculty in statistics departments, we reproduce

Table 2 for male and female faculty. In some cases, the small numbers prevent us from providing all the values. ■

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ASA-SIAM SERIES

Titles Now Available as Individual E-books

In January 2011, SIAM launched its institutional e-book program, which made the ASA-SIAM Series on Statistics and Applied Probability and many other SIAM-published books available electronically to users at libraries that purchased perpetual access or an annual subscription to the program. With almost 100 licenses purchased to date, the program has been successful in making our e-books easily available to thousands of users.

We know not every reader has access to our institutional e-book program and that some customers, regardless of such access, want copies of various e-books for their personal use. In response, we've launched our e-book program for individuals.

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Study of Rankings, Criminal Trajectories Featured in December Issue

The appeal of statistics for many practitioners is the wide range of application areas to which our methods can be applied. This is demonstrated here with the articles that we feature from the December issue of the *Journal of the American Statistical Association*.

Theory and Methods

Rankings appear frequently in modern media to tell us about the most popular websites, the most common baby names, or even the most downloaded *JASA* articles. It is natural to wonder how much attention to pay to such lists. For example, is the item appearing 10th on a list really more popular than the item appearing 11th? It is not immediately obvious how to address this question using statistical methods, because our usual results based on independent identically distributed samples do not appear to be relevant.

Justin Dyer and **Art Owen** provide an answer to this interesting question in “Correct Ordering in the Zipf-Poisson Ensemble.” They propose to view the rank data as a Zipf-Poisson ensemble with each count modeled as a Poisson random variable with mean depending on its position in the list. Using the Zipf-Poisson ensemble as a framework, the authors are able to prove the number of items that we can be confident are appearing in the right spot can be quite small,

even if the rankings are based on a large body of data.

One example they consider is a list of the most frequent words appearing in a large corpus of printed text, the British National Corpus (a body of text comprised of approximately 100,000,000 words). The most commonly appearing word is “the,” which accounts for about 6% of the data; this is followed by “be,” “of,” “and,” and “a.” The theoretical work of Dyer and Owen indicates that for a data set of this size and with frequency distribution like that found in the corpus, the number of correctly ranked items is assured to be 72 or higher. A simulation verifies that this is the case. Beyond that point in the list, it is possible that the variation may be explained by random factors.

Applications and Case Studies

Studies of longitudinal data, where measurements on the same individual are obtained repeatedly over time, are common in statistics, especially in medical studies. This issue of *JASA* includes a fascinating analysis of longitudinal data associated with criminal behavior of an individual over time. In “Modeling Criminal Careers as Departures from a Unimodal Population Age-Crime Curve: The Case of Marijuana Use,” authors **Donatello Telesca**, **Elena Erosheva**, **Derek Kreager**, and **Ross Matsueda** introduce



a novel statistical approach to address a controversial question in criminology. The age-crime curve of an individual records the number of criminal acts of an individual over time. Such curves are used often in criminology to compare demographic groups. Modeling the curves is difficult because they are typically based on relatively short sequences and appear highly variable (e.g., some individuals appear to peak early and others late), despite a long-standing theoretical framework that a single unimodal curve underlies all criminal offenses and is invariant across social groups.

The authors develop a model that is consistent with the long-standing theory and also able to accommodate the large amount of variability in the data. Individual age-crime curves are modeled as random functions distributed about a unimodal population curve. The model allows for individual variation in

the amplitude of the curve (i.e., the relative amount of criminal activity) and allows for individual “warping” of the time scale through an individual-specific time-transformation function. The latter allows individuals to behave in a manner that is consistent with the population curve while allowing for acceleration at some time points and deceleration at others. The model is demonstrated on a longitudinal study of self-reported marijuana use in Denver, Colorado, youth, where it provides a rich array of conclusions from data that appear at first glance to be noisy and uninformative.

Review

This issue also includes another in our occasional series of review articles, here a review of “Instrumental Variable Estimators for Binary Outcomes,” by **Paul Clarke** and **Frank Windmeijer**.

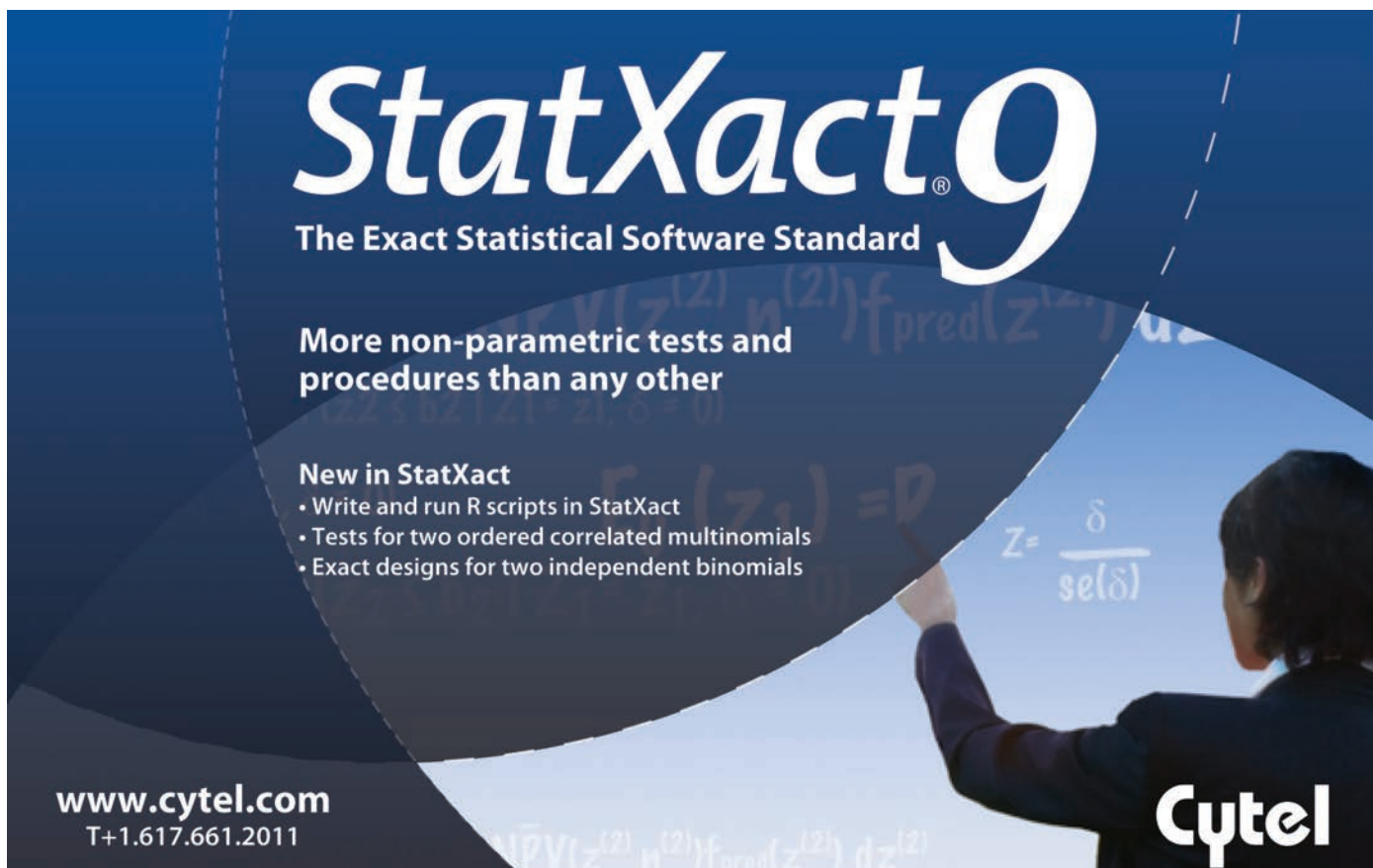
Instrumental variables arise as an approach for assessing the causal effect of a treatment when there is nonignorable selection of those chosen to receive the treatment. It is common to think about the need for adjusting estimated treatment effects in observational studies in which those receiving treatment may differ in important ways from those who don't receive the treatment. The issue also arises in randomized studies in which lack of compliance can cause differences in exposure to the treatment that are associated with individual characteristics that also affect the outcome.

Over the years, economists and statisticians have developed a range of approaches to this difficult issue, including the instrumental variable approach in which an additional variable that affects the outcome only through the treatment (i.e., has no direct effect

on the outcome) can be used to identify the treatment effect.

The authors of this review article survey the different types of instrumental variable approaches that have been proposed for situations with a binary response variable. They highlight the implicit assumptions being made by the approaches and compare their robustness in the face of violations of these assumptions. The findings are illustrated on a re-analysis of a randomized placebo-controlled trial with imperfect compliance in the treatment group.

There are many other informative articles in both sections of the December issue, as well as our usual set of book reviews. The full list of articles and a list of the books under review can be found at <http://amstat.tandfonline.com>, and these three articles will be available for free download for a limited time. ■



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Interview with Persi Diaconis Leads Latest Issue of *CHANCE*

Sam Behseta, *CHANCE* editor

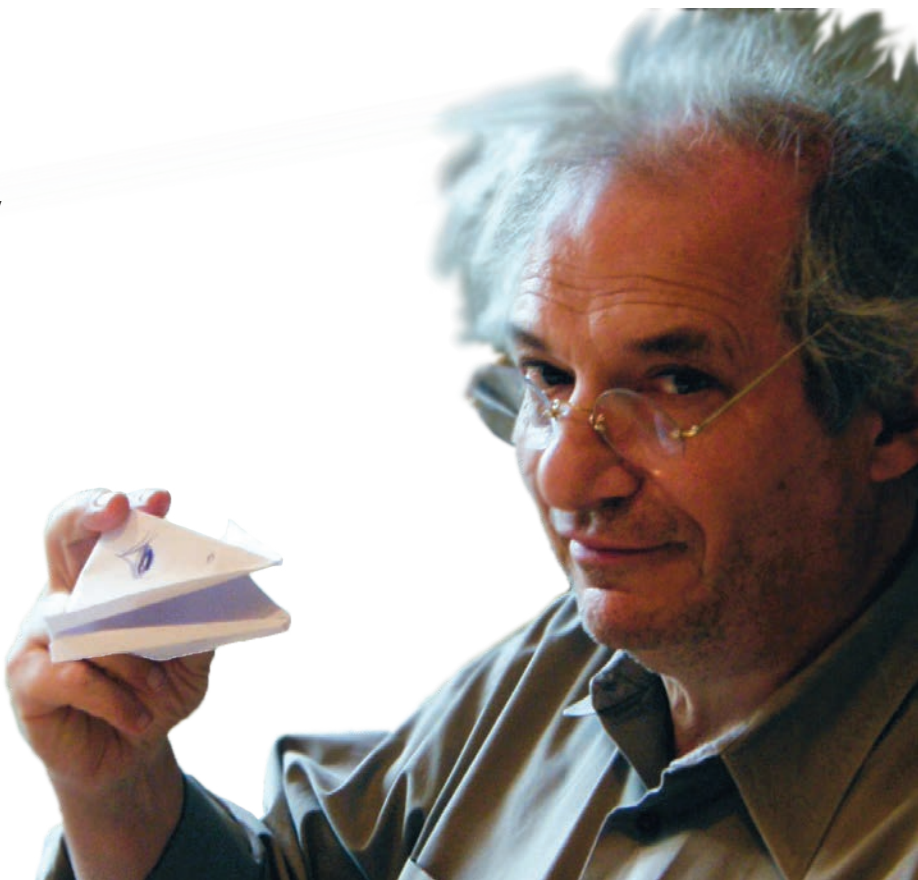
There is no shortage of books about magic. Just search the keyword through your favorite online bookstore. Hundreds of guides, manuals, and how-to books, with or without pictures, large and small, are listed. Some are quite popular, but won't go beyond a stepwise explanation of the mechanics of the magical acts they choose to represent. A few of them, such as Martin Gardner's 1956 classic, *Mathematics, Magic, and Mystery*, are far more exciting, written with a wider perspective over the math behind the magic acts.

This is the same legendary Martin Gardner whose 1956–1981 column Mathematical Games in *Scientific American* inspired a host of young and curious minds to pursue mathematics not as a hobby, but as a career. And this is the same Martin Gardner who, in his letter of recommendation for the young Persi Diaconis to Fred Mosteller, writes “of the 10 best card tricks invented in the last 10 years, this kid invented two of them and maybe you should give him a break.”

In the latest issue of *CHANCE*, **Christian Robert** and I interview Persi Diaconis, one of the authors of *Magical Mathematics*. In a sense, this is the sum of all literature on mathematics of magic. While revealing the machinery of the magical acts, it covers a host of stimulating materials such as de Bruijn sequences, the Gilbreath principle, the Mandelbrot set, DNA sequencing, the Jordan Curve Theorem, and Markov chains, along with a chapter devoted to the lives of iconic figures in the world of magic, including Gardner.

Also in this issue, as documented by **Norma Hubele** and **Mark Arndt**, there is so much at stake in the clashes ensuing from the statistical modeling of vehicular roof safety between governmental agencies, insurance companies, and carmakers that it could potentially inspire an edgy political film project by Robert Redford. Here, the actors include the National Highway Transportation Safety Administration, the Insurance Institute for Highway Safety, and private consulting firms.

Prakash Gorroochurn revisits the many insights of Gerolamo Cardano to some of the most fundamental components of probability theory, from the definition of probabilities as relative frequencies of favorable events in a sample space to the multiplication rule for independent events, the law of large numbers, and the Saint Petersburg paradox. Cardano often gets it right, but in some crucial



Persi Diaconis, an author of *Magical Mathematics*

Photo courtesy of Susan Holmes

junctures, he commits serious mistakes, partly because of his lack of familiarity with a then nonexistent syntactic language of probabilities. What is astonishing, though, is Cardano's visionary insight in foreseeing probabilistic concepts that would be expanded by figures such as Bernoulli, Pascal, and Fermat at a much later time.

In their article, **Mitchell Watnik** and **Richard Levine** carefully build a counterargument to “we need a new stadium to be competitive,” a catchphrase in the world of team sports. Using a data set from Major League Baseball (MLB) spanning 1998–2010, the authors construct a measure of “competitiveness” comprised of the MLB teams' performances, pay-

... the performance of market-predictions is hardly more impressive than the one obtained from Intrade, an opinion-based European platform.

rolls, and payroll rank. Watnik and Levine conclude that there is no evidence to believe new stadiums have been making teams statistically more competitive. Perhaps baseball franchises should look for stronger arguments before selling the idea of building a new stadium to the public.

This past year, election-related opinion polls were in full swing, and some correctly predicted the re-election of Barack Obama. In his article, titled "Prediction Markets: How Accurate Are They?" **Jonathan Wilson** gives an introduction to prediction markets for eliciting a probability of a presidential candidate being elected. According to Wilson, prediction markets can presumably benefit from taking into account the volatility of polls and the closeness of the poll to the actual event. To examine this, Wilson lays out an algorithmic approach

for market-based predictions using 55 days of full trading data from Dow Jones. Devising a windowing technique to calibrate the opinions in favor of the binary outcome of Dow up or down at various time points prior to the closing bell, Wilson's bottom line is the performance of market-predictions is hardly more impressive than the one obtained from Intrade, an opinion-based European platform.

Finally, in this issue of *CHANCE*, **Julia Lane** discusses the issues with privacy and confidentiality in the era of Big Data; **Nicole Lazar** covers the role of imaging modalities in better understanding fMRI data; the editors of *Taking a Chance in the Classroom* devise an impressive coursework for using the data around lead poisoning in children; **Howard Wainer** argues that a careful examination of a national-level 4th-grade mathematics test would demonstrate considerable growth across racial and economic strata in the last 20 years; in his ethics column, **Andrew Gelman** stresses the responsibility of statisticians to clearly state the assumptions of their models; and, in collaboration with **Sophie Donnet**, **Christian Robert** reviews six books, including a hugely popular graphic novel, *Logicomix: An Epic Search for Truth*.

Visit the *CHANCE* website at <http://chance.amstat.org> to read the latest issue. ■

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SAMSI Director Participates in Climate Change Research, Policymaking

Richard Smith, director of the Statistical and Applied Mathematical Sciences Institute (SAMSI), is participating on the Committee on Assessing the Impacts of Climate Change on Social and Political Stresses for the National Research Council. The committee released a report recently that looks at climate change and possible security threats that could arise from extreme weather events.

The report describes the need for the U.S. intelligence community to monitor warnings of a wide variety of security threats that may affect the United States. More scientific evidence that the global climate is changing is accumulating, and as more extreme climate events are occurring, there are new stresses on societies around the world that are creating possible security risks for the United States. Some of these extreme climate events, such as hurricanes, heat waves, and droughts, are exceeding the capacity of affected countries to cope and respond to its citizens.

The connections between the harm suffered from climate events and the political and social outcomes of security concerns has had little attention from the scientific community. The report suggests that the United States Global Change Research Program, along with various science and mission agencies, work with the intelligence community to develop priorities for research on climate vulnerability and adaptation. The research should focus

on items such as quantifying the likelihood of disruptive climate events, improving the understanding of the conditions under which climate-related natural disasters and disruptions of critical systems of life support do or do not lead to important security-related outcomes.

Committee members also suggest that the U.S. government develop a systematic whole-of-government strategy for monitoring threats related to climate change. "There is already a lot of concern about extreme weather events and their possible association with human-caused climate change. Of course, we are most concerned about events that directly affect us, such as hurricanes or flooding in North Carolina, but this report shows why we also need to think about events that occur in distant parts of the world," remarked Smith.

The Board on Environmental Change and Society of the Division of Behavioral and Social Sciences and Education released a brief on November 9, 2012, that was based on the report by the Committee on Assessing the Impacts of Climate Change on Social and Political Stresses, which was sponsored by the U.S. intelligence community.

SAMSI has had several research programs covering statistical questions associated with climate change, including the 2009–2010 Program on Space-Time Analysis for Environmental Mapping, Epidemiology, and Climate Change; the 2011–2012 Program on Uncertainty Quantification: Climate Modeling; and the current



2012–2013 Program on Statistical and Computational Methodology for Massive Datasets.

For more information, visit SAMSI's website at www.samsi.info for presentations and links to some of the research conducted during these programs. ■



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StatSoft Offers Free Software to Struggling Countries



StatSoft, Inc., one of the largest providers of analytics software, is offering STATISTICA Enterprise solutions at no charge to companies in countries most affected by the European economic downturn: Greece, Portugal, and Spain.

StatSoft's motto, "Making the World More Productive," reflects its core belief that business analytics and Big Data processing are key to the productivity of every growing company. The sour economies in some countries, however, have

made it impossible for struggling businesses to afford the software solutions that could help them streamline operations and achieve safety, quality, and environmental improvements. So, for a limited time, StatSoft is offering its Enterprise and Predictive Analytics solutions for free to qualifying businesses.

"Given StatSoft's recent growth in other international markets, we are very pleased to be in a position to help our corporate neighbors in Greece, Portugal, and Spain, whose well-known capabilities are being undermined by regional economic conditions," said StatSoft's CEO, Paul Lewicki.

"The highly educated work force in those economies is fully capable of taking advantage of the well-demonstrated, tangible productivity improvements and savings that our modern predictive analytics software can offer. Paradoxically, however, the shortage of available credit prevents them from acquiring the crucial technology that would vastly speed up their recovery. Our goal is to make sure these companies succeed, because we firmly believe that analytics can change the world for the better."

Those companies in Spain and Portugal interested in this free software opportunity must contact the StatSoft Iberica office. Companies in Greece are welcome to contact any StatSoft office in Europe (www.statsoft.com/contact-us/statsoft-locations-map) or the U.S. headquarters. ■

Mathematics of Sustainability Chosen as Theme of MAM 2013

Mathematics Awareness Month is sponsored each year by the Joint Policy Board for Mathematics to recognize the importance of mathematics through written materials and an accompanying poster that highlight mathematical developments and applications in a particular area. This year, Mathematics Awareness Month will focus on the mathematics of sustainability.

Being human means continually balancing our needs with the world's resources while operating within the laws of nature. Mathematics helps us better understand these complex issues and is used by mathematicians and practitioners in a wide range of fields to seek creative solutions for a sustainable way of life. Society and individuals will need to make challenging choices; mathematics provides us with tools to make informed decisions.

Visit the Mathematics Awareness Month website at www.mathaware.org to find a downloadable poster, theme essays, links to related resources, and a sample press release that can be adapted by mathematics departments to help publicize activities.

Will Your 2013 JSM Poster Have Statistical Significance?



Members of the Scientific and Public Affairs (SPA) Committee invite all 2013 JSM poster contributors to compete for a policy applications prize in its third Statistical Significance competition. A \$250 prize will be awarded to the JSM poster that includes a Statistical Significance piece that judges deem describes the best contribution of statistics to society.

What constitutes a Statistical Significance piece? Statistical Significance is a short one-page illustration of the value of statistics to society within the context of the research problem dealt with in the poster submitted for JSM presentation. The objective is to illustrate to a lay person how the statistical solution to the problem presented in the poster would help form decisions that improve our society in specific areas such as health, agriculture, economy, education, manufacturing, medicine, etc. This specific piece should be clearly written to convey the beneficial role of statistics in a concise and unambiguous manner. The most effective Statistical Significance pieces are easy to develop, simple in exposition, enlightening, and fun to

read. See www.amstat.org/policy/statsig.cfm for examples.

The participants in this Statistical Significance contest must include a one-page Statistical Significance piece along with their poster presentation at JSM. Both the scientific merit of the poster and the Statistical Significance piece will be judged. Posters

without the separate Statistical Significance page will be ineligible to win the competition.

A panel of judges appointed by the SPA committee will visit the posters at JSM and determine a winner. The winner will be notified immediately thereafter.

To enter the Statistical Significance contest, email your intention to compete to Dan McCaffrey, SPA poster coordinator, at daniel-mccaffrey@comcast.net. When you submit the poster abstract, remember to include your abstract number. Feel free to contact Dan McCaffrey or Susmita Datta (susmita.datta@louisville.edu) if you have any questions. ■

Editor's Note: Participation in this competition is only available to poster authors who submit their abstract by the JSM deadline of February 4.

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The background features a dark blue field with several vertical bars of varying heights in a lighter blue shade. A thick, vibrant red curve starts from the left side, sweeping upwards and to the right, ending near the top right of the page. The main title is positioned in the upper right area.

INTERNATIONAL YEAR OF **STATISTICS**

to Increase Visibility of Profession

Ron Wasserstein, ASA Executive Director

Statisticians work in a vast array of fields—advancing science; creating new methodology; providing information that shapes public policy; improving business practices and enhancing production quality; making our medicines more effective, our food safer, and our planet better; and so much more. Statisticians come from many cultures, speak many languages, and arrive at statistics as their profession through many paths. But at least one aspect is recognized by virtually every statistician: Our discipline and profession is simply not visible enough.

The International Year of Statistics (Statistics2013) is a major effort to increase the visibility of statistics and encourage young people to consider statistics as a career. Statistic2013 is a worldwide celebration and recognition of the contributions of statistical science. It is a grassroots effort involving more than 1,300 organizations from more than 100 countries. Through the combined energies of these organizations worldwide, Statistics2013 is promoting the importance of statistics to the broader scientific community, business and government data users, the media, policymakers, employers, students, and the general public. Its goals are the following:

- To increase public awareness of the power and impact of statistics on all aspects of society
- To nurture statistics as a profession, especially among young people



- To promote creativity and development in the sciences of probability and statistics

Statistics2013 began with one person's vision and one society's initiative, was fanned into flame by the efforts of five statistical societies working as one, and is now spanning the globe. In early 2011, Sastry Pantula, then the past-president of the American Statistical Association, noted that 2011 was the International Year of Chemistry. "Why not an International Year of Statistics?" he asked.

Why not, indeed! The ASA leadership quickly consulted with that of the International Statistical Institute (ISI) and learned that the Bernoulli Society was already far along in planning a celebration in 2013 of the 300th anniversary of Jacob Bernoulli's *Ars Conjectandi*, the seminal work in probability. Bayes Theorem was also first presented publicly in 1763, making 2013 the 250th anniversary of that important work. With this in mind, a committee of representatives from the Royal Statistical Society (RSS), Institute of Mathematical Statistics (IMS), ISI, International Biometric Society (IBS), and ASA worked out a statement of goals, and the leadership of the five societies agreed to collaborate to make 2013 the International Year of Statistics.

By fall of 2011, a steering committee (www.statistics2013.org/committee.cfm) and preliminary website had been established, and we began recruiting organizations to take part in Statistics2013. We had no idea the response would be so fantastic! Professional societies, colleges and universities, secondary schools, government entities, businesses, and others are among the vast network of organizations joining in the celebration of the International Year of Statistics.

There is much energy and creativity in this network, as evidenced by some of the plans coming in from around the world:

- Statistics Lithuania (the government agency responsible for official statistics in Lithuania) is organizing a conference about statistics and youth. They have started a photography competition related to statistics and developed wall and pocket calendars related to the International Year of Statistics.
- At Donetsk National University in the Ukraine, a "School of the Young" will allow students to connect to data in a way that reveals the use of statistics in various aspects of their lives. A research competition for students also is planned.
- The Department of Statistics at Shahrood University of Technology in Shahrood, Iran, is hosting a special competition for undergraduate students. Nine students will be selected to present their statistical research.



SAS Institute in Cary, North Carolina, with banners proclaiming 2013 as the International Year of Statistics

- The Uganda Statistical Society has scheduled monthly seminars for Statistics2013 and a special symposium to kick off the year.
- The Association of Women in Science (AWIS) is creating an area on its website dedicated to the celebration and is developing a series of profiles on women in statistics it will highlight there. AWIS also is developing a webinar on careers in statistics for women.
- A cluster of universities (from Canada, Costa Rica, Ecuador, and Mexico) are organizing an applied statistics congress to emphasize the importance of statistics in addressing social, economic, health, and environmental problems.
- A group of young statisticians from around the world has agreed to blog about careers in statistics during 2013.
- The Russian National Statistics Olympiad featured the International Year of Statistics.
- SAS Institute has festooned its Cary, North Carolina, campus with banners proclaiming 2013 as the International Year of Statistics.

As of this writing, many organizations are still finalizing their plans. But these provide a taste from several continents.

In addition to the grassroots effort, the Statistics2013 Steering Committee is contributing the following activities to the celebration as well:

- A website (<http://statistics2013.org>) with information about statistics and careers in statistics, with regularly updated news features, an interactive quiz, informational cartoons, and more



Winners of the Russian National Statistics Olympiad held at the Federal State Statistics Service (ROSSTAT), from left: Chief of ROSSTAT Alexander Sourinov; Vice Chief Irina Masakova; students Ksenia Kruzhkova, Ksenia Guenina, and Anastassia Maksimova (absolute winner of the Olympiad); team supervisor Anna Dukhon; and organizing committee members Mikhail Karmanov, Nathalia Tikhomirova, and Vitaly Minashkin (chair)

- A video (<http://youtu.be/nTBZuQR7dRc>) by SAS Institute about statistics and its relevance to most aspects of our lives, which is subtitled in many languages. The video is being used by organizations around the world to explain to people what statistics is and why it matters. If you haven't seen it already, take a look, and distribute it to your network of friends and colleagues.
- A second video, featuring interesting careers in statistics, is planned for mid-2013.
- A video contest regarding statistics that is open to everyone
- A poster highlighting the contributions of statistics (see centerfold)
- A research conference in London in November that will feature many of the top statisticians in the world, along with scientists with whom they collaborate to advance knowledge and improve human welfare

The aforementioned activities and events are a major means by which Statistics2013 will raise awareness. But the Statistics2013 Steering Committee plans some direct outreach to the media and public as well. Here are a few examples:

- A promotional tool kit has been provided to all participating organizations, giving information and strategies that can be used for outreach.
- The website will be a powerful tool for raising awareness of statistics.

- Major outreach to media worldwide is planned and under way.
- The Census at School program will reach children around the world in a way that helps them understand statistics as relevant, and even fun! See www.amstat.org/censusatschool and www.censusatschool.org.uk/international-projects.

By increasing awareness of the impact of statistics and how statisticians are people whose work makes a difference in the lives of billions of people, we hope to attract new people into the profession and connect even more effectively with other sciences. We hope the resources being developed and the connections being made live well beyond the end of 2013. We also hope 2013 brings the start of activities that make statistics come alive for people, not the end of them.

What can you do? If you are in an organization involved in the International Year of Statistics, find out what your organization is doing and what you can do to help. If your organization does not belong, encourage it to join. Any organization is welcome. A short form can be filled out on the Statistics2013 website. Indicating the name of the organization, a contact person, that person's email address, and the URL of the organization's website is all that is needed.

Individuals can get involved, too, by filling out an even shorter form asking to receive the bi-weekly newsletter. Individuals can read about activities around the world and consider how they can be a part of promoting the goals of Statistics2013.

So ask yourself how you can contribute to the goals of the International Year of Statistics. As you contribute, let me know what you've done, and we'll spread the word about how you are spreading the word about the power and impact of statistics. ■

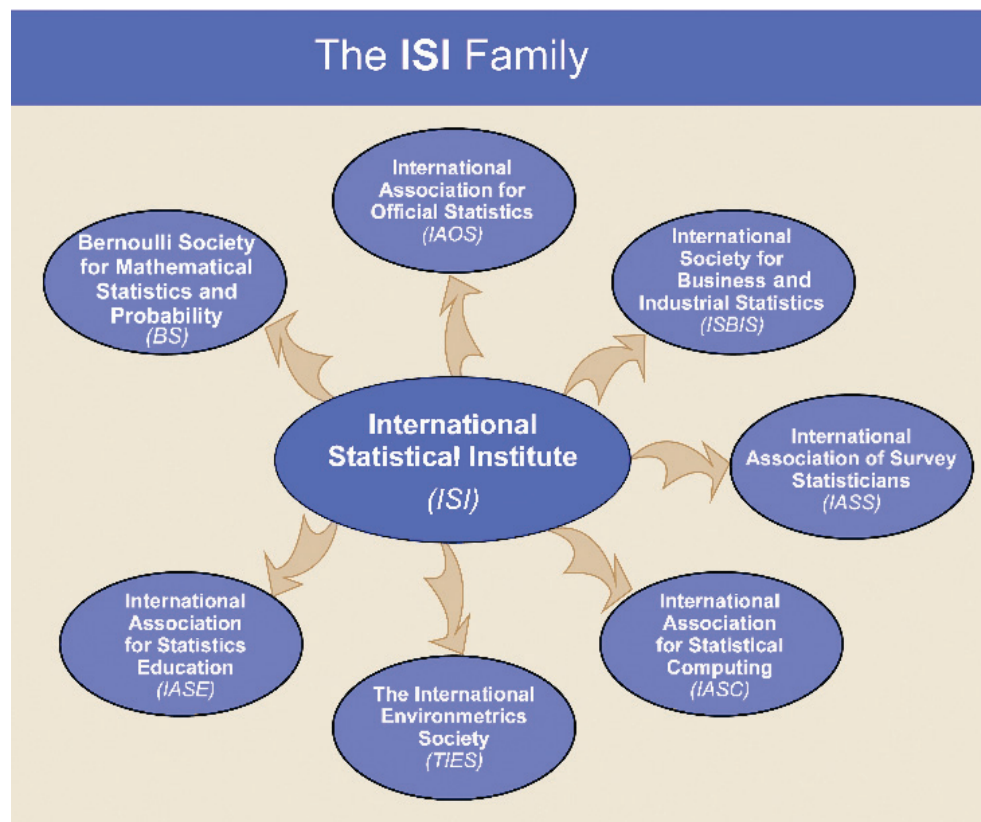
The ISI in 2013

The International Statistical Institute (ISI) is a member of the steering committee for the 2013 International Year of Statistics, along with the ISI Bernoulli Society, American Statistical Association, Royal Statistical Society, International Biometric Society, and Institute of Mathematical Statistics.

Based in The Hague, The Netherlands, the ISI began in 1853 and has a rich history of international congresses dating back to that year. The ISI is known for its seven specialized associations and their extensive worldwide activities: Bernoulli Society for Mathematical Statistics and Probability (BS), International Association of Survey Statisticians (IASS), International Association for Statistics Education (IASE), International Association for Official Statistics (IAOS), International Association for Statistical Computing (IASC), International Society for Business and Industry (ISBIS), and The International Environmetrics Society (TIES).

In addition to the efforts being undertaken by the steering committee, the ISI and its associations are planning several events and initiatives for Statistics 2013. The event will be recognized at the ISI's biennial World Statistics Congress (WSC) in Hong Kong from August 25–30, and the ISI's associations will organize satellite meetings and short courses. Visit www.isi2013.hk/en/index.php for more information about WSC.

The Bernoulli Society is one of the key groups making Statistics 2013 a reality. As 2013 is also the 300th anniversary of the publishing of Jakob Bernoulli's *Ars Conjectandi* and the 250th anniversary of Thomas Bayes' first



public presentation of his work, the Bernoulli Society will celebrate 2013 in the following ways:

A special issue of the *Bernoulli Journal* that will focus on invited papers covering future directions in probability and statistics. It will be accessible to everyone.

A special issue of *Stochastic Processes and Their Applications* (SPA) will provide an overview of recent and future development of statistics for stochastic processes. The 36th SPA Conference in Boulder, Colorado, from July 29 July to August 2 will have an open lecture.

A special issue of *Bulletin of the American Mathematical Society* in

July about the effect of the work of Jakob Bernoulli's family

An invited paper session at the WSC titled "History I: Jakob Bernoulli's 'Ars Conjectandi' as the Emergence of Probability"

Lectures on *Ars Conjectandi* and Thomas Bayes at the 29th Meeting of European Statisticians (EMS)

A session for the 300th anniversary of the St. Petersburg paradox and a panel discussion about the future of statistics in Budapest, Hungary, from July 20–25

A special session for *Ars Conjectandi* at the Joint Statistical Meetings in Montréal, Canada, from August 3–8



Producing Reliable Estimates from Imperfect Frames

Call for Contributed Papers

Statistics Canada's 2013 International Methodology Symposium will take place at the Ottawa Convention Centre, located in the heart of downtown Ottawa, from October 15–18.

The theme of the symposium is "Producing Reliable Estimates from Imperfect Frames." Members of the statistical community—such as those from private organizations, governments, or universities—are invited to attend, particularly if they have a special interest in methodological issues resulting from the use of imperfect frames.

The first day will consist of workshops, while the following days will include both plenary and parallel sessions covering a variety of topics. Additional research and results may be presented via poster sessions.

We are soliciting contributed papers examining methodological issues resulting from the use of imperfect frames. Topics may include the following:

- Frame Developments
- Multiple Frames
- Two-Phase Designs Adaptive Designs
- Alternative Designs
- Indirect Sampling
- Telephone Surveys
- Web Surveys
- Hard-to-Reach Population Surveys
- Tracing Methods
- Use of Administrative Data
- Combined Data Sets
- Big Data
- Calibration and Related Estimation Methods
- Adjustments for Coverage Errors
- Adjustments for Classification Errors
- Small Domain Estimation

Your proposal must be submitted by email to symposium2013@statcan.gc.ca by March 20. It should include a 250-word abstract (in French or English) giving the content of the presentation, as well as its title and your complete contact information.

We will contact you by May 10 to inform you whether your proposed communication has been accepted. If it has been accepted, the final slides of your presentation must be submitted (in English or French) by August 26. Proceedings from the conference will be published and disseminated to participants, so your final paper will need to be sent by December 20.

A separate international conference, *Ars Conjectandi* 1713–2013, in Basel, Switzerland, from October 15–16

More Bernoulli Society activities can be viewed at www.bs2013.org.

The IASC is planning a Big Data analysis competition in connection with the ISI satellite meeting that has Big Data and statistical computing as its theme. The meeting will take place in Seoul, Korea, from August 22–23 (see <http://hbutton.com/IASC>). A data set on a topic of global interest will be available. Individuals or groups are to develop a poster, and the winners will present their results at the satellite meeting in Seoul. Three winners will be invited to submit a manuscript to the IASC's journal *Computational Statistics and Data Analysis*. Funds are being organized to host the winners in Seoul for their presentations.

The IASE's International Statistical Literacy Project, launched in September, will hold its poster competition in 2013. Visit www.stat.auckland.ac.nz/~iase/islp/competition-second and www.facebook.com/islp.competition for details.

ISBIS is cosponsoring a workshop with the University Grants Commission of India. The workshop is on statistical analysis of time series data and application and is being organized by the department of statistics at the Cochin University of Science and Technology. For more information, visit www.cusat.ac.in/erp5/web_site_module/cusat/events_archives.

The ISI and its associations welcome your participation in the above-mentioned events. Any suggestions can be sent to isi@cbs.nl. For more information about the ISI, visit www.isi-web.org. ■

Canadian Statistical Sciences Institute Launched

John Brewster and Christian Léger, Statistical Society of Canada



The Statistical Society of Canada (SSC) is pleased to announce that, with the formation of the initial board of directors and seed funding of \$50,000 from the SSC development fund, the Canadian Statistical Sciences Institute (CANSSI, pronounced “can-see”) has launched.

CANSSI will be a national virtual institute offering the leadership and infrastructure necessary to increase and further develop statistical sciences research in Canada and promote the discipline. Building on the international stature of the Canadian statistical community, CANSSI will seek to develop all areas of the statistical sciences, including interdisciplinary research where statistical innovation is essential to the development of other disciplines. Through national networks of researchers, CANSSI will tackle the big research questions in statistics of importance to science and the public interest, as well as establish links with other disciplines and organizations that are heavy users and producers of data.

The SSC is pleased that Mary Thompson, distinguished professor emerita at the University of Waterloo, has agreed to be the initial scientific director of CANSSI. She also will serve on the board of directors. With her distinguished career as a researcher and administrator, Thompson will steer CANSSI through this developmental stage.

CANSSI is the result of a large-scale process of reflection within the Canadian statistical sciences community, conducted in tandem with the Long Range Planning Exercise for the Mathematical and Statistical Sciences, initiated by the Natural Sciences and Engineering Research Council of Canada (NSERC). As an outcome of the Long Range Planning discussions, the directors of the three mathematical sciences institutes are committed to working with the statistical sciences community on the CANSSI initiative, with the inclusion of funding for CANSSI projects and activities in the next cycle of NSERC proposals.

CANSSI will be part of the Canadian network of thematic and collaborative resources envisaged in the Long Range Plan and will seek to increase the recognition of the importance of the statistical sciences in

CANSSI Board of Directors

Regional associate directors

Hugh Chipman (Atlantic Provinces)

Christian Genest (Québec)

Nancy Reid (Ontario)

Alexandre Leblanc (Manitoba/Saskatchewan)

Will Welch (Alberta/B.C.)

Representatives of statistical sciences organizations in other countries or representatives of disciplines or sectors where statistics is applied

Rosemary Bender (Statistics Canada)

Arvind Gupta (MITACS)

Michael Kramer (McGill)

Richard Smith (SAMSI)

Francis Zwiers (Pacific Climate Impacts Consortium)

Directors of the three Canadian mathematical sciences institutes

Alejandro Adem (Pacific Institute for the Mathematical Sciences)

Edward Bierstone (Fields Institute for Research in Mathematical Sciences)

François Lalonde (Centre de Recherches Mathématiques)

Canada. Having a national institute will allow the statistical sciences community to pursue its own directions and seek additional funding opportunities.

In October, the SSC Board of Directors decided to allocate seed money to CANSSI from its development fund in recognition of the importance of this initiative to the Canadian statistical sciences community. This will allow CANSSI to function until it obtains anticipated funding for infrastructure from institutional memberships (beginning in May 2013). ■

Join the Celebration

Robert L. Mason



What has changed in the ASA since its 150th anniversary celebration in 1989? Let's step back in time and recall some of the events that occurred in the association that year.

Janet Norwood was the new ASA president. The membership count was more than 15,000, with about 2,000 members located in 92 countries outside the United States. The Founders Award to recognize members who had provided distinguished service to the ASA was established, and the first two recipients were Fred Leone (a past executive director) and Margaret Martin (the 1980 ASA president). The first issue of *STATS* magazine was issued in the spring. The Quality and Productivity Section was established, increasing the number of sections to 11. There were 75 ASA chapters located throughout the United States. The Office of Scientific and Public Affairs was started and its first director was hired. A revision of the ASA constitution was well under way.

In early January, the third Winter Conference was held in San Diego, California. In August, the Joint Statistical Meetings (JSM) was held in Washington, DC, and there was record attendance of 4,200 registrants with more than 1,000 paper presentations. The opening session was signaled with a flourish by the Patowmack Ancients Fife and Drum Corps. A temporary postal station for mailing letters with an ASA-150 pictorial cancellation was set up in the registration area. A special offer for attendees was the opportunity to purchase the latest Hewlett-Packard hand calculator (model HP-21S for \$35 or HP-28S for \$150).

Many activities were held throughout 1989 to celebrate the ASA's sesquicentennial anniversary. There was a sesquicentennial videotape titled "Statistical Science: 150 Years of Progress." There were souvenirs, including lapel pins, mugs, T-shirts, pens, and bumper stickers. There were several publications, including a special sesquicentennial JSM proceedings volume and a report titled "Challenges for the '90s." A time capsule was placed in the ASA headquarters building. The year ended with a symposium and banquet celebration held in Boston on December 9.

In the 25 years since 1989, the ASA has definitely grown in many areas, expanded its influence, and adapted to the many changes in our society. Although the number of chapters remains stable at 74, the ASA now has more than 18,000 members. We can more readily communicate using various media, such as Facebook, smart phones, iPads, email, etc. We also have access to a multitude of statistical computer software packages.

The ASA has a strategic plan that incoming ASA presidents use to ensure there is continuity in programs. There is a voluntary professional accreditation program. We have more than double the number of sections that we had in 1989, and these have extended the range of emphasis into specialized areas such as statistics in imaging, statistical learning and data mining, and statistics in defense and national security.

The ASA is fortunate to have a new headquarters building in Alexandria, Virginia, and an excellent staff headed by Executive Director Ron Wasserstein. There is a director of science policy to help promote statistics and the ASA among legislative and policymaking organizations. The ASA also hired a public relations coordinator. Both of these positions help promote the visibility of the statistics profession.

JSM has continued to grow, with attendance reaching more than 6,300 registrants at the 2012 meetings in San Diego, ranking it as the second-highest attended JSM conference. In addition, there is a new Conference on Statistical Practice that the ASA started in 2012.

There is an entirely new structure for governing ASA committees, which are now headed by the Leadership Support Council with groups of committees reporting to the three board vice presidents. This structure has greatly strengthened the committees and more closely aligned them with the strategic goals of the association.

There is a change in journals and how they are disseminated, with Taylor & Francis now distributing most of them. In addition, there is online access to all ASA journals and magazines.

It is exciting to consider the many changes in the ASA that have occurred over the past 25 years. In 2014, we will celebrate a 175-year-old organization that has continued to improve and enhance the statistics profession—and serve its members. This has been accomplished, in great part, by our many volunteers who are willing to share their time working on ASA projects and events. The opportunities that await the statistics profession in the future are only limited by our imaginations. Come join the celebration! ■



SCIENCE POLICY

Big Data: A Perspective from the BLS

Michael W. Horrigan, Bureau of Labor Statistics Associate Commissioner

I'm pleased to have Bureau of Labor Statistics Associate Commissioner Michael W. Horrigan as this month's guest columnist. With the buzz about Big Data—as well as the private efforts to produce independent estimates for certain government statistics using Big Data—I was excited to see Horrigan address the topic of Big Data and official statistics at the Association of Public Data Users 2012 Annual Conference. In this column, Horrigan discusses the future of the use of Big Data for the U.S. statistical system.

~ Steve Pierson, ASA Director of Science Policy

Big Data—a term that has an increasingly familiar ring, but also defies easy description. As may be the case for many of the readers of *Amstat News*, I first became aware of the term when I heard about the Billion Prices Project at MIT. As head of the Bureau of Labor Statistics (BLS) Office of Prices and Living Conditions, the idea that researchers at MIT were constructing daily price indexes for several countries using “web scraping” techniques to convert posted Internet prices to a digitized database was immediately intriguing.

I invited Roberto Rigobon (he and Alberto Cavallo head the MIT project) to give a talk on the subject at BLS. In addition to Rigobon being one of the most engaging and entertaining speakers ever to grace the halls of BLS, his message struck a chord and started me down the path of asking, “What are Big Data?” The answer to this question and the extent to which we use Big Data in our programs at BLS surprised me.

I begin, and probably at my peril, by attempting to define Big Data. I view Big Data as nonsampled

data, characterized by the creation of databases from electronic sources whose primary purpose is something other than statistical inference.

The Billion Prices Project digitizes posted Internet prices to construct estimates of daily price change. Hal Varian, chief economist at Google, has done highly innovative work using Google searches to create proxies for current economic activity. For example, to predict, at time (t), the level of initial claims for unemployment insurance (UI) at time ($t+1$), he constructs a model of distributed lag values of prior weeks' initial claims data along with an index of searches made in the current week that are relevant to people looking for information about filing an initial claim. This is a clever combination of ‘official’ government collected data with the construction of an indicator from a ‘big’ data source.

Based on presentations I have seen in the last year, Varian also is exploring the use of Google's enormous database of prices to construct price indexes for goods traded on the net. Matthew



Shapiro, along with other researchers at the University of Michigan, has used data from Twitter accounts in a model that also predicts the level of initial claims for unemployment insurance, where he isolates tweets that reference job loss. And yet another example of Big Data is scanner data such as the point of sale retail databases and the household-based purchase data from A.C. Nielsen.

These innovative and exciting explorations of data would seem not to be the standard fare for an agency like the BLS. But are they? How do we fit into this picture of the use of Big Data?

From a nonsampled data point of view, I point to the traditional and extensive use of administrative data to draw stratified probability samples and create weights for constructing estimates. The difference here is that this type of Big Data typically comprises the universe and, by definition, can represent (nearly) the entire population of establishments (the BLS Quarterly Census of Employment and Wages drawn from the universe of establishments reporting to the UI system) or households (the 2010 Decennial Census of household addresses).

There are numerous other administrative databases such as those covering railroads, hospitals, medical claims, and auto sales that we use for our surveys. For example, our item sample of used cars and trucks in the Consumer Price Index Program (CPI) is drawn from the universe data collected by JD Power and Associates. We use universe data on hospitals from the American Hospital Association

to draw our samples of hospitals and data from the Agency for Healthcare Research and Quality to select the diagnosis codes used for pricing diagnosis related groups (DRGs) in the Producer Price Index Program (PPI).

In addition to using nonsampled universe files to draw samples and create sampling weights, we use this type of administrative data for the direct construction of population estimates. For example, the International Price Program (IPP) uses Energy Information Agency administrative data on crude petroleum for their import indexes; the PPI uses Department of Transportation administrative data on baggage fees in constructing airline price indexes. The PPI also uses a monthly census of all bid and ask prices and trading volume for all traded securities as of market close for three selected days of the month to construct price indexes for securities. The CPI uses SABRE data to construct airline price indexes. Both the PPI and CPI use the universe file for Medicare Part B reimbursements to doctors by procedure code in the construction of health care indexes.

In other cases, administrative data are used to fill in missing data as an alternative method of imputation or in making statistical adjustments to improve the efficacy of estimates. For example, the Current Employment Statistics (CES) Survey uses administrative data from the Quarterly Census of Employment and Wages (QCEW) to impute for key nonrespondents in the production of industry employment estimates by state. QCEW data also are used in the development of the CES net birth-death model to account for the creation and death of firms between updates to the universe file used in constructing monthly employment estimates.

But what about the use of more 'traditional' Big Data techniques? In fact, my not-so-random survey of programs in BLS uncovered some intriguing forays into Big Data exploration. For example, in the CPI, I knew we were using web-scraping techniques to collect input price information used to increase the sample of observations we use to populate some of our quality adjustment models. So far, we have used this technique with quality adjustment models for televisions, camcorders, cameras, and washing machines. What I also discovered is that we are web scraping Current Procedural Terminology (CPT) codes, descriptions, and reimbursements for Medicare Part B quotes used in index calculation. CPI also is researching the use of web scraping for the collection of prices for cable TV services.

This latter example raises an obvious question: Why not just use web scraping to produce the

CPI? The principal reason is the requirement that we select a bundle of goods and services that is a statistically representative sample of what consumers purchase and reprice that same bundle month after month. Accomplishing this can be challenging, especially having to account for changes in the quality characteristics of goods and goods that disappear off the shelves from one month to the next. The representative basket is updated on a regular basis to reflect changes in consumer preferences and the emergence of new products; however, the principle of constructing an inflation rate based on the rate of price increase for a known bundle of goods with statistically determined weights lies at the heart of what we do. While research may show the viability of using a web-scraped source of data for a particular item, it needs to be done within the framework of this methodology. The Billion Prices Project, with all of its advantages in terms of the timeliness of a daily price index and large sample sizes, does not price the same representative bundle on a daily basis, nor does it have a source of sampling weights derived from the websites for which it collects prices.

BLS, like many agencies, has been exploring the use of retail scanner data for many years. To date, our most extensive use of scanner data has been in the realm of research, including comparative research between CPI data and scanner data. For example, we are conducting research that compares, for specific expenditure classes of items (e.g., fats and oils), the distributions of items selected in the CPI selection process with the distributions of those same items in the A.C. Nielsen Homescan database.

And one final example of Big Data that is unique even in terms of the examples given above and has the potential to affect our data collection systems greatly is the use of corporate data. In one of our surveys, a respondent has sought an arrangement in which we replace local, establishment-by-establishment data collection (our samples always include numerous establishments owned by the same parent company) with corporate data that they maintain on every item sold in every one of their establishments in the domestic United States. I would venture the opinion that, compared to the types of Big Data cited above, these qualify as ‘really Big Data.’

In today’s fast-paced economy, there is often a single point of control and/or information gathering on the inventories, pricing schedules, and sales of every item and store under the aegis of multi-establishment companies—the same companies for which we often need to collect data on

Given rising costs of data collection and tighter resources, there is a need to consider the creative use of Big Data, including corporate data.

an establishment-by-establishment basis. With cooperative respondents—an essential ingredient—there is enormous potential for the use of corporate data. There are significant potential benefits of greatly increasing sample coverage and sample size. There also is the potential for reducing data collection travel costs and respondent burden (the reduction in travel costs has to be viewed against the lens of increased IT development and processing requirements). In addition, the quality of the data may improve. In the case of the respondent noted above, the data represent actual transactions at the cash register as opposed to data collected on the list prices of items on the store floor.

And so, what is the future of the use of Big Data for the U.S. statistical system? I see one immediate potential: the use of Big Data to improve the quality of our estimates within our current methodological frameworks. This may include studies of comparability between official and Big Data-derived estimates, the use of Big Data for modeling and imputation, and—in some cases—the use of Big Data for direct estimation.

One important caveat, and one that is as relevant to the U.S. statistical system as it is to the practitioners of Big Data techniques such as Billion Prices and Google, is the need to create transparent methodological documentation (metadata) that describes the ways in which Big Data are used in the construction of any kind of estimate. Given rising costs of data collection and tighter resources, there is a need to consider the creative use of Big Data, including corporate data. However, the blending of estimates drawn from traditional statistical methods and the incorporation of larger universe data requires clear statements of how these estimates are developed and a perspective on potential sources of sampling and nonsampling errors that can produce biases in our estimates and threats to valid inference. ■

STATtr@k

Post Doc: A Unique Opportunity

Haley Hedlin



Postdoctoral training is becoming more common in statistics; however, postdoctoral positions with a significant statistics education component are rarer. One such position at the Five College Consortium combines research at a large research university and teaching at liberal arts colleges.

The Five College Consortium consists of four liberal arts colleges (Amherst, Hampshire, Mount Holyoke, and Smith) and a large research university (University of Massachusetts Amherst) within a 15-mile radius in western Massachusetts. The consortium is home to the Five College Statistics Program, a program created to “coordinate and integrate resources in order to better serve our statistics students” (www.fivecolleges.edu/statistics). The close geographic proximity of the campuses and the consortium’s tight-knit statistics community provide a unique opportunity for recently minted statistics PhDs to explore careers at small and large academic institutions in a postdoctoral program.

Jeffrey Stratton and I are the first two postdoctoral associates to hold a position in this program, headed by principal investigator Michael Lavine and funded by a National Science Foundation (NSF) grant. A search is under way for a third postdoctoral associate (the application and more information can be found at www.mathjobs.org/jobs/jobs/4031).

In addition to funding postdoctoral statisticians, the NSF grant supports a graduate student in statistics at the University of Massachusetts Amherst who provides statistical consulting services for undergraduate researchers and faculty during weekly visits to each of the liberal arts colleges. Both prongs of the grant benefit the colleges by injecting additional statistical expertise into their communities. Early career statisticians benefit greatly from experiencing different types of academic departments. By providing a taste of the life of a statistician at a liberal arts college, the grant serves to better inform the career choices of the pre- and postdoctoral statisticians funded on the grant.

The responsibilities of the postdoctoral associates are divided between the typical postdoctoral role of developing their research programs and, less typical of

statistics postdocs, activities related to undergraduate statistics education. The educational component consists of teaching one statistics class each semester at a liberal arts college.

Teaching a single course each semester allows time to develop course materials, and teaching different courses allows me to create a corpus of course materials to use in the future. During my first semester, I co-taught an introduction to statistics and probability course with Katherine Halvorsen, a senior statistics faculty member at Smith College. Co-teaching a course with such an experienced educator provided invaluable insights into teaching.

During my second semester at Smith, I taught a statistical literacy course to students with a wide range of interests and majors, but limited mathematical background, with support from the other statisticians in the consortium. This fall, I am teaching an applied linear regression course at Mount Holyoke College. By the end of my postdoc, I will have taught at women’s colleges (Smith and Mount Holyoke), coeducational colleges (Amherst and Hampshire), and a nontraditional college in which students design their own majors and grades are written reports on their progress (Hampshire).

An entirely new experience I encountered during my first year was mentoring students enrolled in a statistics project seminar course. Master’s-level students, along with a few advanced undergraduates, were matched with one or two other students, a statistics adviser, and a researcher with a project requiring an advanced statistical method such as hierarchical linear models, classification and regression trees, or kernel smoothing. As lead statistics adviser of a group, I led students through the literature review, learning the statistical method required, applying the method, and presenting their findings. This experience taught me how to guide students learning a new method outside of the classroom, communicate what is expected of the students, and guide someone through a research project from start to finish.

In addition to the statistics education opportunities, a postdoctoral position that rotates between academic departments allows me to peek into several departments and get a sense of life at a variety of academic institutions. I am receiving mentoring by senior and junior statisticians at large and small institutions alike. I know of no other postdoctoral position that combines research at a large university and teaching at liberal arts colleges and consider myself fortunate to have found myself in this unique position. ■

USCOTS Plenary Speakers Announced

The theme for the 2013 United States Conference on Teaching Statistics (USCOTS) is “Making Change Happen.” The conference will be held from May 16–18 at the Embassy Suites Hotel and Conference Center in Raleigh-Durham, North Carolina. Plenary speakers and their titles include the following:

Xiao-Li Meng of Harvard University, “Energizing Higher Education for Statistics and Beyond: $T=(IE)^2$ ”

Chris Wild of the University of Auckland, “The Need for Speed in the Path of the Deluge”

Hollylynn Stohl Lee of North Carolina State University, “Envisioning a Future Teacher of Statistics in K–12 Classrooms”

Nicholas Horton of Smith College and **Danny Kaplan** of Macalester University, “All Statistics Are Wrong, but Some Statistics Are Useful”

Proposals for “posters and beyond” contributions are still being accepted. Awards, including the USCOTS Lifetime Achievement Award, will be presented at a banquet on the SAS campus on May 17. Musical and statistical entertainment will be provided at the banquet by Larry Lesser and The Fifth Moment.

Don’t forget about the A-μ-Sing! Competition for jokes/cartoons, poetry, songs, and videos (entries are due by March 1). See www.causeweb.org/uscots/a-mu-sing for details.

Upcoming Competitions

We hope you will encourage your students to participate in the Undergraduate Statistics Project Competition (USPROC). The purpose of USPROC is to encourage the development of data analysis skills, enhance presentation skills, and recognize outstanding work by undergraduate statistics students. Prizes in the 2013 competition will be awarded in two divisions: long-

term undergraduate research projects (e.g., as part of an REU, senior capstone research project, etc.) and undergraduate projects completed as part of work in a statistics course. The submission deadline is May 15. See <http://people.cst.cmich.edu/lee1c/usproc> for details.

Stay tuned to www.causeweb.org/uscots for pre-conference workshop information as USCOTS 2013 approaches. ■

Volunteers Needed

The ASA is seeking champions to expand the U.S. Census at School program. Champions can be teachers who use the program in their classes or statisticians and statistics educators who assist teachers who are not familiar with statistics and statistical problemsolving. There are many ways to get involved, including sharing information about the program with local schools, writing lesson plans, and teaching local statistical education workshops for teachers. For those interested in teaching local workshops, the ASA will provide materials.

The ASA also is building online Census at School resources and seeking those interested in writing new U.S. Census at School lesson plans or adapting international Census at School lesson plans for U.S. data. Those leading workshops for grades 4–12 and pre-service teachers should encourage these educators to create lesson plans using U.S. Census at School data and submit them to the STatistics Education Web (STEW), an online bank of peer-reviewed lesson plans for K–12 teachers. STEW lesson plans for Census at School will be published on the statistical literacy program’s website.

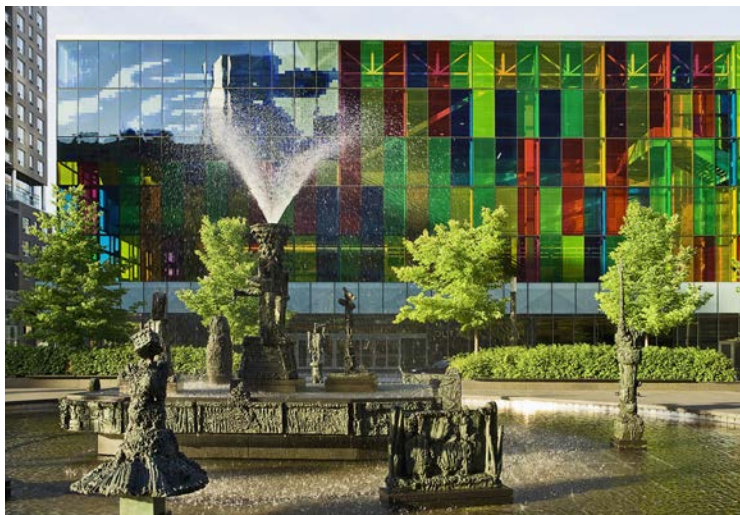
Educators teaching or advising undergraduate or graduate statistics students can encourage or require their students to get involved in service learning by working with grades 4–12 teachers and students to incorporate Census at School and enhance statistical problemsolving skills.

Other ideas to enhance and expand the program are welcome. Contact Rebecca Nichols, ASA director of education, at rebecca@amstat.org about these and ongoing efforts regarding service-learning or other activities.



Montréal: A Bit of History

Marc Bourdeau, President of the ASA's Montréal Chapter



Palais des congrès (Montréal Convention Center)

Photo courtesy of Thinkstock

Montréal was founded in 1642 by French settlers who had a mystical plan in the back of their minds to Christianize the American native peoples. Most of the settlers came from the Champagne region and established several religious organizations, hospitals, schools, and communities of sisters and brothers. Well, so it was ... religion at our beginnings. ... But the localization of Montréal was particularly happy, and it is not a coincidence.

Montréal is situated on a large island (365km², compared to 87km² for Manhattan) in the “Giant River,” as it is called in Québec, the St. Lawrence River. The river, being narrow at this point, controls the boat traffic and, at the time, all communications.

The Lachine rapids, a small way upstream, are a barrier that rapidly had to be bypassed. From the beginning then, Montréal became the commercial hub of the region. The development of the train created a large freight industry from Montréal. And in the 1820s, the first Lachine canal was inaugurated, which propelled Montréal into becoming a major North-American port.

The numerous native peoples have lived on mostly peaceful terms with the French throughout Québec's history. One reason for this is the two groups were so few in number until the end of Nouvelle France. After a few native peoples' wars at the beginning of the French Colony, the Great Treatise of Montréal in 1701 resulted in a peace that has, by and large, lasted.

After the dismantling of Nouvelle France in 1763 by the British, Montréal became a mostly English-speaking city that grew to be fairly important after America's independence in 1776, with its many refugees from south of the border. It was mainly a commercial city, with a central role for its port.

The French-speaking population lived on the outskirts of Montréal and in the vast countryside, excluded by their religion and language from positions of importance for close to two centuries.

The French population of Nouvelle France was about 50,000 in 1760. It grew rapidly, doubling every 20 years or so until the 1940s and its return to the Island of Montréal.

Mostly peasants and factory workers until the end of WWII, the French-speaking population became educated early in the nineteenth century, but only at a low level.

McGill University was founded in 1823. The Université de Montréal (UdeM) started as a fledgling branch (1878) of the Université Laval, founded in Québec City in 1852. The École Polytechnique de Montréal (Poly-Montréal) dates back to 1873, and the Hautes Études Commerciales (HÉC-Montréal) was founded in 1907. It was in 1927 that UdeM became an autonomous university, with Poly-Montréal and HÉC-Montréal becoming affiliated schools. Now, UdeM stands close to the top 100 in the Shanghai classification, with some of its faculties at a much higher place. McGill stood at the 60th place in 2010. There are actually four large universities in Montréal, two being French speaking. There are close to 200,000 university students in Montréal.

The French-Speaking Population

At the beginning of the British occupation, the small French-speaking population mingled with a few thousand German mercenaries sent by George III, one of the British kings from the House of Hanover, to defend its colony. Many of the mercenaries were living with French-speaking peasants who were in lack of male descendants. Peace, good land, and lots of space for development were, as now, the main factors of desirability for immigration.

More, all through the 19th century, a large number of Irish orphans (made so by their parents dying while fleeing the famines) mingled with the French-speaking peasants. British immigrants from the American colonies of the late 18th century either migrated to Montréal from the New England border or assimilated into the community



Montréal City Hall

Photo courtesy of Thinkstock

of French farmers with whom they shared the land. So, the French-speaking population of Québec and Montréal is of mixed origins and constitutes roughly 90% of Québec's total population (8 million).

If one looks at the Montréal flag, it is separated into four quarters, occupied by the emblematic flower of each of the four main peoples who created the city as it is today: the French fleur-de-lis, the Scottish thistle (most of the English-speaking population in Québec is of Scottish descent), the Irish shamrock, and the English rose (the Lancaster rose).

And Now

Montréal, due to a generous Québec immigration policy, became one of the most cosmopolitan cities in North America during the last half of the 20th century and essentially functions in French for its daily activities.

The Révolution Tranquille (Quiet Revolution), a strong but peaceful social swerve in Québec that started in the 1960s, has brought Montréal to the forefront of industrial and commercial development.

Possibly because of the adversities from the rest of English-speaking North America, there was a strong collective mindset early on in Québec that has expressed itself more since the Quiet Revolution. Our civilization is very much socialized, putting Montréal and all of Québec at the top for its quality of life and the equality of its citizens.

Montréal, in just a few decades, became the modern city you will experience during JSM 2013. ■

SPEED Sessions Come to JSM

Bhramar Mukherjee and Marie Davidian

A recurrent concern for many JSM attendees has been the seemingly unbounded size of the

MontréalCanada
JSM2013

meeting. Having to choose among 46 parallel sessions and navigate the inevitable conflicts that arise has been a source of frustration for many. Therefore, a pilot study of contributed sessions with a different format will be conducted during JSM 2013.

In Montréal, we will test “SPEED sessions.” Five large ASA sections (Biometrics, Statistics in Epidemiology, Statistical Learning and Data Mining, Biopharmaceutical Statistics, and Survey Methodology) will collaborate on this pilot venture. A SPEED session will consist of 20 oral presentations of approximately five minutes, with a 10-minute break after the first set of 10 talks. These short oral presentations will be followed by a poster session later on the same day. The following incentives will be offered to the presenters who agree to participate in the pilot SPEED sessions:

- Electronic poster boards will be provided to SPEED presenters, so there will be no additional costs or hassle associated with printing or transporting your poster
- Refreshments will be provided at the poster sessions corresponding to the SPEED sessions
- A certificate of appreciation and a special badge will be given to SPEED presenters

We also plan to recruit distinguished members to chair the SPEED sessions.

When you submit your contributed paper abstract to any of the five ASA sections above, you will see an option asking whether you are willing to participate in a SPEED session. Choose one of the five ASA sections (i.e., Biometrics, Statistics in Epidemiology, Statistical Learning and Data Mining, Biopharmaceutical Statistics, or Survey Methodology) and “SPEED” from the list of track options. You will have approximately five minutes of oral presentation time and time during the electronic poster session later the same day to discuss your ideas further.

We will conduct a detailed presenter and attendee survey to learn from this pilot study. Please consider this option when you submit your contributed abstract. Together, we can make the JSM program better!



Cox

Gertrude Cox

The Gertrude M. Cox Award Committee is seeking nominees for the 2013 Gertrude M. Cox Award.

The award includes a \$1,000 honorarium, travel expenses to attend the Washington Statistical Society's (WSS) annual dinner, and a commemorative plaque.

The award was established in 2003 through a joint agreement between the WSS and RTI International to annually recognize a statistician in early to mid-career (less than 15 years after his/her terminal degree) who has made significant contributions to one or more of the areas of applied statistics in which Gertrude Cox worked: survey methodology, experimental design, biostatistics, and statistical computing.

In 1945, Gertrude Cox became director of the Institute of Statistics of the Consolidated University of North Carolina. In the 1950s, as head of the department of experimental statistics at North Carolina State College, she played a key role in establishing mathematical statistics and biostatistics departments at The University of North Carolina. Upon her retirement from North Carolina State University in 1960, Cox

became the first head of the statistical research division at the newly founded RTI. She was a founding member of the International Biometric Society (IBS) and, in 1949, became the first woman elected into the International Statistical Institute. She served as president of both The American Statistical Association (1956) and the IBS (1968–1969). In 1975, she was elected to the National Academy of Sciences.

The award is presented at the WSS annual dinner, usually held in June, with the recipient delivering a talk on a topic of general interest to the WSS membership before the dinner. Visit <http://magazine.amstat.org/blog/category/membernews/awardnews/> to view a list of online sponsors.

Email your nominations to Karol Krotki at kkrotki@rti.org by February 28 with a supporting statement and CV (or link).

Ellis R. Ott

The statistics division of the American Society for Quality has \$7,500 scholarships to support students who are enrolled in, or are accepted into, a master's degree or higher program with a concentration in applied statistics and/or quality management. This includes the theory and application of statistical inference, statistical decisionmaking, experimental design, analysis and interpretation of data, statistical process control, quality control, quality assurance, quality improvement, quality management, and related fields. The emphasis is on applications, as opposed to theory. Studies must take place at North-American institutions.

Qualified applicants must have graduated in good academic standing in any field of under-

graduate study. Scholarship awards are based on demonstrated ability, academic achievement, industrial and teaching experience, involvement in student or professional organizations, faculty recommendations, and career objectives.

Application instructions and forms should be downloaded from <http://asq.org/statistics/about/awards-statistics.html>. Forms will be accepted until April 1.

Throughout the last 15 years, scholarships totaling \$215,000 have been awarded to 38 students. Last year's winners include Emily E. Wisner of North Carolina State University and Nathaniel Stevens of the University of Waterloo, Ontario, Canada.

For more information, contact Lynne Hare at lynnehare@verizon.net or 55 Buckskin Path, Plymouth, MA 02360.

Roger Herriot

Nominations are sought for the 2013 Roger Herriot Award for Innovation in Federal Statistics. The award is intended to reflect the special characteristics that marked Roger Herriot's career, including dedication to the issues of measurement, improvements in the efficiency of data-collection programs, and improvements and use of statistical data for policy analysis.

The award is not limited to senior members of an organization, nor is it to be considered as a culmination of a long period of service. Individuals or teams at all levels within federal statistical agencies, other government organizations, nonprofit organizations, the private sector, and the academic community may be nominated based on their contributions. Team nominations are encouraged.

The recipient of the award will be chosen by a committee

comprising representatives of the Washington Statistical Society and Social Statistics and Government Statistics sections of the American Statistical Association. The award consists of a \$1,000 honorarium and a framed citation, which will be presented at a ceremony at the Joint Statistical Meetings in August. The Washington Statistical Society also will host a seminar given by the winner on a subject of his or her choosing.

Nomination packages should contain the following:

A cover letter from the nominator that includes references to specific examples of the nominee's contributions to innovation in federal statistics. These contributions can be to methodology, procedure, organization, administration, or other areas of federal statistics and need not have been made by or while a federal employee.

Up to six letters of support that demonstrate the innovativeness of each contribution.

An updated vita for the nominee with current contact information. For team nominations, vitae for all team members should be included.

Completed packages must be received by April 1. Electronic submissions in Word or PDF format are strongly encouraged. The committee may consider nominations made for prior years, but it encourages resubmission of those nominations with updated information.

For more information, contact Jill M. Montaquila, chair of the 2013 Roger Herriot Award Committee, at jillmontaquila@westat.com.

Visit www.amstat.org/sections/ssoc/rogerherriot.html to read more about the award and Herriot's life. ■

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

www.amstat.org/awards

January 15, 2013

COPSS Presidents' Award

Raymond J. Carroll, copsspresidents2013@gmail.com

January 15, 2013

COPSS Florence Nightingale David Award

Nancy Reid, reid@utstat.utoronto.ca

January 15, 2013

COPSS George W. Snedecor Award

Nilanjan Chatterjee, chattern@mail.nih.gov

March 1, 2013

ASA Fellows

Nominations accepted online at www.amstat.org
Questions: David L. DeMets, demets@biostat.wise.edu

March 9, 2013

ASA Statistics in Chemistry Award

Philip J. Ramsey, pjrstats@aol.com

March 15, 2013

ASA W. J. Dixon Award for Excellence in Statistical Consulting

Nominations: Pam Craven, pamela@amstat.org
Questions: Mani Y. Lakshminarayanan, Mani_Lakshminarayanan@merck.com

March 15, 2013

ASA Founders Award

Nominations: Pam Craven, pamela@amstat.org
Questions: Robert N. Rodriguez, bob.rodriguez@sas.com

March 15, 2013

ASA W. J. Youden Award in Interlaboratory Testing

Nominations: Pam Craven, pamela@amstat.org
Questions: Michael J. Messner, messner.michael@epa.gov

March 15, 2013

ASA Waller Education Award

Nominations: Pam Craven, pamela@amstat.org
Questions: June Morita, june@stat.washington.edu

March 15, 2013

Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society

Nominations: Pam Craven, pamela@amstat.org
Questions: Margaret A. Nemeth, margaret.a.nemeth@monsanto.com

April 1, 2013

ASA Gertrude M. Cox Scholarship

Nominations: Pam Craven, pamela@amstat.org
Questions: Eleanor Feingold, feingold@pitt.edu

April 1, 2013

ASA Outstanding Statistical Application Award

Nominations: Pam Craven, pamela@amstat.org
Questions: DuBois Bowman, dbowma3@emory.edu

April 1, 2013

ASA Edward C. Bryant Scholarship

Nominations: Pam Craven, pamela@amstat.org
Questions: Tapabrata Maiti, maiti@stt.msu.edu

April 1, 2013

ASA Excellence in Statistical Reporting Award

Nominations: Pam Craven, pamela@amstat.org
Questions: Morteza Marzjarani, marzjara@svsu.edu

April 1, 2013

ASA Samuel S. Wilks Memorial Medal

Nominations: Pam Craven, pamela@amstat.org
Questions: Paul P. Biemer, ppb@rti.org

Seventeen Members Elected Fellows of AAAS

In November of 2012, the American Association for the Advancement of Science (AAAS) council elected 701 members as Fellows. These individuals will be recognized for their contributions to science and technology at the Fellows forum during the AAAS annual meeting in Boston, Massachusetts. The new Fellows received a certificate and blue and gold rosette as a symbol of their distinguished accomplishments.

The ASA members elected as Fellows to the AAAS Section on Statistics include the following:

Arlene S. Ash, University of Massachusetts

Katherine Bennett Ensor, Rice University

Barry I. Graubard, National Cancer Institute

Karen Kafadar, Indiana University

KyungMann Kim, University of Wisconsin-Madison

Ira M. Longini Jr., University of Florida

David Madigan, Columbia University

Nitis Mukhopadhyay, University of Connecticut

Haikady N. Nagaraja, The Ohio State University

Allan R. Sampson, University of Pittsburgh

Nell Sedransk, National Institute of Statistical Sciences

Ajit C. Tamhane, Northwestern University

Marina Vannucci, Rice University

Naisyin Wang, University of Michigan

Ronald L. Wasserstein, American Statistical Association

Russell D. Wolfinger, SAS Institute

Weng Kee Wong, University of California at Los Angeles

The entire list can be viewed at www.aaas.org/aboutaaas/fellows/2012.shtml. ■

Obituaries

Jack Hall

David Oakes, Jon Wellner, Robert Strawderman, and Siddhartha Dalal



W. Jackson "Jack" Hall—a Fellow of the ASA, emeritus professor of statistics, and professor in the department of biostatistics and computational biology at the University of Rochester—died peacefully on October 14, 2012, at the age of 82.

In the course of his long and highly distinguished career, Jack made deep and influential contributions to many areas of statistics, including decision theory, Bayesian statistics, survival analysis, semiparametric inference, and sequential analysis. In recent years, he used his expertise in sequential analysis to work extensively with medical colleagues to develop innovative statistical designs for clinical trials in cardiology.

Jack was educated at The Johns Hopkins University, the University of Michigan, and The University of North Carolina at Chapel Hill, where he earned a PhD in statistics in 1955. In 1953–1954, he attended the universities of Manchester and Cambridge as a Fulbright Scholar.

After a spell at what is now the Center for Disease Control and Prevention in Atlanta (helping to track down the faulty

batches of the Salk polio vaccine), he took a faculty position at UNC Chapel Hill, where he became full professor in 1955. He moved to the University of Rochester in 1969 to chair the new department of statistics. He was instrumental in developing the doctoral program at Rochester. He was also a key figure in the establishment of the division of biostatistics, the forerunner of the current department of biostatistics and computational biology. Jack held visiting positions at Stanford, Berkeley, Sheffield, Seattle, Reading, Oxford, and Sydney.

In addition to the ASA, Jack was a Fellow of the American Association for the Advancement of Science and Institute of Mathematical Statistics. He was an elected member of the International Statistical Institute.

Jack was known for his devotion to teaching, including advising graduate students. At Chapel Hill, he played a pivotal organizational role in maintaining the graduate program at a time of transition. At Rochester, he established a doctoral program and advised 12 students, many of whom have gone on to distinguished careers.

Jack was the first recipient of the University of Rochester Lifetime Award for Graduate Education in 2004. All his advisees, and many others, wrote letters in support. Common themes included the care and attention he gave to his students, his detailed reading of their dissertations, and help with personal matters from the time they came to Rochester until they graduated and later. Many commented that they had become lifetime personal friends.

Jack remained active professionally until ill health forced

him to retire in July 2012. On the occasion of a small gathering to mark his retirement, he took great delight in being informed that, according to the Mathematics Genealogy Project website, he was (via his own adviser Wassily Hoeffding) a seventh-generation descendant of Gauss. He promptly emailed all his students informing them that they were eight-generation descendants.

Jack published more than 150 papers. A number of early papers—some co-authored with Alexander Langmuir, a giant of public health—described the spread of the 1955 polio outbreak and the methods taken to monitor it. His research interests spanned a huge range of modern statistical activity, including sequential analysis, sufficiency, and invariance; contiguity theory; efficiency issues in semiparametric estimation and testing; Bayes procedures; large deviations and p -values; and survival analysis.

In a landmark collaboration encouraged by the editors of the *Annals of Mathematical Statistics*, E. L. Lehmann and J. L. Hodges, Jack's 1965 paper with Robert Wijsman and Jayanta K. Ghosh provided the statistical community with an important view of the subtle connections and interactions between sufficiency and invariance and applications thereof to sequential analysis.

Jack's interest in sequential analysis lasted throughout his career, beginning with his work on sequential versions of Stein's two-stage test in the early 1960s and continuing until work in 2001–2003 with B. Yakir and Aiyi Liu. Much of this research interacted substantially with his applied work on clinical trials for various problems associated

with cardiology, conducted with Arthur Moss and others at the University of Rochester (UR) Medical Center. Recently, Jack's professional time was spent mostly on his collaborations with colleagues in cardiology, but he continued to teach his trademark courses in large sample theory and sequential analysis.

Jack, who lived four miles from the UR campus, was known to ride a bicycle to work for many years. He was an avid skier and outdoorsman. In addition to his wife, Nancy, he is survived by children, Rebecca, Bryan, and Kay Cohen; stepchildren, Barbara Hufsmith and Edwin Hufsmith; and seven grandchildren. His daughter, Jacqueline Minet, predeceased him.

The department of biostatistics and computational biology at the University of Rochester has set up a fund, the William Jackson Hall Graduate Student Fellowship, as an enduring tribute to Jack's legacy and influence on the statistics doctoral degree program and its students. If you would like information about making a donation in Jack's memory, contact the department chairman, Robert Strawderman, at robert_strawderman@urmc.rochester.edu.

William Lawton

William Lawton passed away in his home in Rochester, New York, on July 9, 2012.

Lawton began his statistics career in the management systems development division at Eastman Kodak Company in Rochester, New York, and worked with leaders in quantitative analytics such as Richard A. Freund and J.E. "Ted" Jackson. When he realized the

need for more advanced analytics techniques, he attended the University of California at Berkeley and earned his PhD in statistics under Erich Lehmann. A paper based on his dissertation was published in the *Annals of Mathematical Statistics* as "Concentration of Random Quotients."

Returning to Kodak, Lawton assumed a leadership position first as group leader of the mathematical analysis group and later as supervisor of the applied mathematics section; his team included Mary Maggio, Dick Scott, and Ed Sylvestre.

Later, Lawton was appointed editor of *Technometrics*, and in 1985, after a year as director of strategic information, he became corporate director of business research for the Eastman Kodak Company, serving on the company's corporate quality advisory council until he retired from this position in 1990.

After retiring from Kodak, he was named professor of marketing at the William E. Simon Graduate School of Business Administration at the University of Rochester. He also became a senior research associate with Joiner Associates of Madison, Wisconsin.

Riaz Rana

Riaz H. Rana, a statistician who founded Statistica in 1978, died November 4 at Howard County General Hospital in Maryland.

A commercial airline pilot in Pakistan, Rana immigrated to the United States in 1960 and earned a master's degree in statistics from the University of Connecticut. In 1968, he moved to Columbia, Maryland, and began working at The Johns Hopkins University Applied Physics Laboratory in Laurel.

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



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sectionnews

Biometrics

The Biometrics Section will sponsor the following invited sessions at the Joint Statistical Meetings, August 3–8, in Montréal, Canada:

- Current Statistical Issues in Comparative Effectiveness Research, organized by Haibo Zhou, The University of North Carolina
- Dynamic Treatment Regimes and Adaptive Designs Toward Personalized Health Care, organized by Lu Wang, University of Michigan
- Emerging Statistical Methods for Big Data, organized by Ping Ma, University of Illinois at Urbana-Champaign
- Frontiers in Longitudinal and Survival Data Analysis, organized by Gang Li, University of California at Los Angeles
- Big Data, Big Impact When Statistics Matter, organized by Ching-Ti Liu, Boston University
- Questions in Cancer Research: What Are the Most Pressing Statistical Problems?, organized by Michelle Dunn, National Cancer Institute

The 2013 JSM program chair, Wei Sun, is collecting proposals for topic-contributed sessions. If you are interested in organizing such a session, contact him at wsun@bios.unc.edu. Abstract submission will close February 4.

Also, the section invites applications for funding to support innovative outreach projects focused on enhancing awareness of biostatistics among quantitatively talented U.S. students. Projects that will encourage students to pursue advanced training in biostatistics are especially wanted. The section anticipates funding up to three projects, with total funding of up to \$3,000 per project.

The deadline has been extended, so a three-page application is now due January 21. A project period with a start date no earlier than February 15, 2013, and an end date no later than December 31, 2013, also should be specified. Applications should be submitted electronically

to the Strategic Initiatives Subcommittee chair, Roslyn Stone, at Roslyn@pitt.edu, in the following format:

- Title
- Objectives and specific aims
- Background, significance, and/or rationale
- Design and methods
- Budget

All investigators will be expected to submit a brief report at the conclusion of the project.

For details, visit <http://magazine.amstat.org/?cat=17>.

Physical and Engineering Sciences

Winson Taam, 2013 section chair, looks at all the opportunities the section provides and shares the section's plans to participate in several activities in the New Year, including the Conference on Statistical Practice in New Orleans, Louisiana, in February; the Spring Research Conference in Los Angeles, California, in June; the Joint Statistical Meetings in Montréal, Canada, in August, and the Fall Technical Conference (FTC) in San Antonio, Texas, in October.

David Edwards, section program chair, highlights the activities of last year's FTC. "Statistics and Quality: Expanding the Horizon" was the theme of the conference, which took place in St. Louis, Missouri.

This year's FTC will be held October 17–18 in San Antonio, Texas. Section members who are interested in presenting an applied or expository paper should contact Robert Wilkinson at Robert.Wilkinson@lubrizol.com for abstract submission guidelines. The deadline to submit an abstract is February 28.

For details about the section's upcoming events, including the FTC, visit the section news department online at <http://magazine.amstat.org/?cat=17>.

Quality and Productivity

Theresa Utlaut, 2013 chair of the Quality and Productivity Section, looks forward to the New Year, including the International Year of Statistics and attending a number of conferences scheduled this year.

The first conference scheduled is the Conference on Statistical Practice, which will take place February 21–23 in New Orleans, Louisiana. Visit www.amstat.org/meetings/csp/2013/index.cfm for details.

Next up is the Fall Technical Conference in San Antonio, Texas, October 17–18. If you are interested in presenting an applied or expository paper, contact Willis Jensen at wjensen@wlgore.com or Bob Wilkinson at Robert.Wilkinson@lubrizol.com.

Also, the Quality and Productivity Research Conference (QPRC) will be held at the GE Global Research headquarters in Niskayuna, New York, June 5–7. Papers for the conference can be submitted to Martha Gardner at martha.gardner@ge.com. The abstract submission deadline is March 1. For more information, see the conference website at www.qprc2013.com.

In conjunction with the QPRC, the Mary G. and Joseph Natrella Scholarship offers a \$3,500 grant and \$500 travel stipend to students currently

pursuing full-time graduate work in statistics. The application deadline is March 1. For information, visit the scholarship website at www.amstat-online.org/sections/qp/Natrella_Scholarship.html.

In addition to the scholarship, the section will offer up to three \$400 travel grants to graduate students who wish to attend the Joint Statistical Meetings in Montréal, Québec, Canada, in August. Contact Ming Li at limi@ge.com to request an application. Applications will be accepted through March 31.

The section also will offer web-based training classes this year. They are available at www.amstat.org/sections/qp/webinar.cfm. If you have ideas for future offerings, please contact the section's webinar coordinator, Ananda Jayawardhana, at ananda@pittstate.edu.

Finally, these activities could not be completed without the help of volunteers. If you would like to volunteer, email the 2013 section chair, Theresa Utlaut, at theresa.l.utlaut@intel.com.

For detailed section news, visit the section news department online at <http://magazine.amstat.org/cat=17>.

Survey Research Methods

John Czajka, past chair of the section, discusses the challenges the survey profession faced in the past year, particularly in the political arena, and looks at how, in the end, survey science triumphed.

Czajka also notes that, against this backdrop, the section had a strong year, including an excellent program at the Joint Statistical Meetings and the debut of the *Journal of Survey Statistics and Methodology*. A joint effort between the American Statistical Association and American Association for Public Opinion Research, the peer-reviewed journal will provide a welcome, new venue for the kind of work in which many of the section members are engaged. The journal's inaugural editors are Joseph Sedransk and Roger Tourangeau.

To read more about the new journal and the entire end-of-the-year report from John Czajka, visit section news at <http://magazine.amstat.org/cat=17>. ■

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



Apply Now!

ASA Student Travel Awards

2013 Joint Statistical Meetings in Montréal, Québec, Canada,
from August 3–8!

Up to Three \$400 Travel Awards!

- For grad students enrolled in applied statistics and/or quality management programs.
- Contact Ming Li (limi@ge.com) for complete information about the award and how to apply.
- Applications accepted through March 31, 2013

Awarded by the Quality and Productivity (Q&P) Section
of the American Statistical Association (ASA)



Arkansas

■ Mathematical Statisticians. Division of Bioinformatics and Biostatistics, National Center for Toxicological Research, FDA, seeks a PhD biostatistician to develop statistical methodologies for risk assessment and biological/toxicological data analysis, and a M.S. biostatistician to analyze animal toxicological data. The selected candidate will be hired with the salary range of \$47,448 - \$106,369. Send CV and future research interests to: Dr. James J. Chen, Email: JamesJ.Chen@fda.hhs.gov. EOE.

Colorado

■ Special Appointment Assistant Professor Department of Statistics, Colorado State University. Special appointment, assistant professor position beginning August, 2013. Non-tenure track, nine-month/yr., renewable, teaching position includes undergraduate teaching, teaching assistant supervision, and course coordination duties. The full posting and online application are at <http://cns.natsci.colostate.edu/employment/statsTeaching>. Review begins 1/20/2013 and may continue until filled. Colorado State University is an EO/EA/AA employer. Colorado State University conducts background checks on the final candidates.

■ The department of mathematics at the Metropolitan State University of Denver invites applications for a tenure-track position in statistics. Applicants must have a PhD in statistics or mathematics or applied mathematics, provided that they had graduate level courses in statistical theory, applied statistics and probability. PhD in statistics and experience in teaching statistics are preferred. For more details and how to apply see www.msudenverjobs.com. MSU Denver is an EO/AA employer.

■ The department of mathematical and statistical sciences at the University of Colorado Denver invites applications for a tenure-track assistant professor position in statistics beginning August 2013. We seek candidates with excellent research potential and strong commitment to quality teaching. Application review begins 1/7/2013. For more information, see the full posting at www.jobsatcu.com (job posting 819855) or contact Stephanie.Santorico@ucdenver.edu. The University of Colorado Denver is committed to diversity and equality in education and employment.

Florida

■ The University of South Florida St. Petersburg is seeking applicants for a director of quality enhancement plan

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.

University of Kentucky

Tenured/Tenure-Track positions in statistics, beginning 8/15/13. All research areas in statistics/probability welcome, including mathematical statistics.

Applicants at associate/full level expected to have record of external funding and doctoral dissertations directed; applicants at assistant level expected to aspire to the same. Experience/interest in online teaching and/or developing new graduate courses is a plus.

Selection begins 1/15/13 and continues until positions are filled. Email (stromberg@uky.edu) CV, teaching and research statements and have three letters of reference sent to Dr. Arnold J. Stromberg, Chair, University of Kentucky, Department of Statistics, 725 Rose Street, Lexington, Kentucky 40536-0082.

Visit our website at <http://stat.uky.edu>.

Positions subject to budgetary approval. EOE: To enrich education through diversity, the University of Kentucky is an affirmative action, equal opportunity employer.



Assistant/Associate/Full Professor Applied Statistics/Biostatistics: Big Data

Faculty Position available for September 1, 2013 hire.

The Department of Mathematical Sciences at New Jersey Institute of Technology seeks candidates to fill a tenure-track/tenured position at the Assistant/Associate/Full Professor level in the general area of Biostatistics. The Department is particularly interested in candidates whose research interests focus on the development & application of statistical methods for problems from biomedical fields involving "Big Data."

Prerequisite Qualifications: Candidates should have a PhD in statistics or biostatistics with strong teaching & research potential for consideration at the Assistant Professor level & an appropriate record of accomplishment in classroom teaching, mentoring doctoral students & research publication & funding, at the Associate or Full Professor level. Postdoctoral experience for hiring at the assistant professor level is preferred.

DMS offers BS, MS & PhD degrees, with tracks in the PhD program in Applied Probability & Statistics, as well as Applied Mathematics. Many opportunities exist for collaboration with biostatisticians & clinical researchers at the nearby University of Medicine & Dentistry of NJ, the Public Health Research Institute & the International Center for Public Health, all within walking distance of NJIT. For more information about DMS faculty & programs, visit <http://math.njit.edu>.

Please apply online at njit.jobs using posting # 0601232.

Required Documents: CV, Cover Letter, Teaching & Research Statements, Course Evaluations, 3 letters of reference. Have letters of reference mailed or emailed to: Ms. Susan Sutton, Department of Mathematical Sciences, New Jersey Institute of Technology, 323 Dr. MLK Jr. Blvd., Newark, NJ 07102-1982; suttons@njit.edu.

At the university's discretion, the education and experience prerequisites may be accepted where the candidate can demonstrate to the satisfaction of the university an equivalent combination of education & experience specifically preparing the candidate for success in the position. NJIT is committed to diversity among its faculty, & applications from women and underrepresented minorities are encouraged. NJIT is an Equal Opportunity Employer M/F/H/V.

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■ The Farquhar College of Arts and Sciences seeks applications at the ranks of assistant, associate, and full professor for statistics faculty 993557 August 2013. Teach undergraduate courses in statistics and/or statistics. Earned doctoral degree in statistics is strongly preferred; minimum requirement is master's degree in statistics with progress toward doctoral degree. Apply at www.nsujobs.com and submit a letter of interest, resume, and curriculum vitae. www.nsujobs.com EOE.

Louisiana

■ Assistant professor (Tenure-Track) Louisiana State University-College of Agriculture-Department of Experimental Statistics. Responsibilities: 40% teaching, 30% research-scholarship, 30% collaborative research and consulting. Required Qualifications: PhD and strong background in applied statistics. Offer of employment contingent on satisfactory pre-employment background check. Application Deadline: January 15, 2013, or until candidate is selected. Starting Date: Fall 2013, apply online and view full

description: lsusystemcareers.lsu.edu Position #030462 LSU is an equal opportunity/equal access employer.

Maine

■ Tenure-track position (assistant professor rank) starting fall 2013. Teaching two courses per semester, one calculus or introductory level course and one intermediate or advanced course. PhD preferred, advanced ABDs considered. Visit www.MathJobs.org to apply. Review begins 12/3/12. Bowdoin College is committed to equality and is an equal opportunity employer. For full description of the position and further information about the college, see www.bowdoin.edu. EOE.

Maryland

■ The Dean of Loyola College, Loyola University Maryland's school of arts and sciences, seeks an experienced administrator in the natural or applied sciences to be a full-time associate dean for the natural and applied sciences: biology, chemistry, computer science, engineering, mathematics and statistics, and physics. For more information about this position, and to apply, please go to <http://careers.loyola.edu> to complete the online application. EOE.

Massachusetts

■ The department of biostatistics and computational biology at the Dana-Farber Cancer Institute seeks a postdoctoral fellow in bioinformatics to work with Nikhil Munshi and Giovanni Parmigiani on bioinformatics projects within the outstanding multiple myeloma program at DFCI. For full details on this opportunity and how to apply, please visit: www.Click2Apply.net/55nnp4y. EOE.

Missouri

■ Missouri University of Science & Technology invites applications for the position of chair of the department of mathematics and statistics, with the assumption of the position in the fall of 2013. For details about the position and the application process please click the academic position link on the website <http://lhraadi.mst.edu/hr/employment/faculty>. Information about the department can be found at <http://math.mst.edu>. Missouri S&T is an AA/EEO institution. Women, minorities, and persons with disabilities are encouraged to apply. Missouri S&T participates in E-Verify. For more information on E-Verify, please contact DHS at: 1(888)464-4218.

Openings for Biostatisticians and Data Analysts



The **Consortium of Rheumatology Researchers of North America, Inc.** (CORRONA) was founded in 2000 by leading rheumatologists dedicated to advancing and improving the care of patients with rheumatic diseases. CORRONA is an independent registry with the mission to provide excellence in the interactions between Clinicians and the scientific community to gather high quality data for the advancement of treatment for musculoskeletal, rheumatic and other inflammatory diseases and conditions. CORRONA is a virtual company with employees across the United States in home-based positions. CORRONA has openings for Biostatisticians (PhD level) and Data Analysts (MS level) with experiences working with registry or longitudinal databases. These are wonderful opportunities to work with an established, highly motivated team. Below are brief synopses of the current position opportunities at CORRONA, if you would like detailed descriptions of these exciting opportunities, please email HR@CORRONA.ORG.

BIostatistician is the analytical leader of CORRONA projects and participates in all scientific aspects related to these projects. Responsibilities: Collaborating with investigators from diverse backgrounds to develop analytic queries and statistical analysis plans (SAPs); Leading an analytical team comprised of data analysts and programmers to complete SAPs; Developing standardized algorithms for efficient statistical analyses; Representing CORRONA at Subscriber meetings, professional meetings, symposia and trade shows. Qualifications: Doctorate in Biostatistics, Statistics or Mathematics; Minimum 3-5 years' experience in a research or medical setting; Demonstrated knowledge of retrospective and prospective observational study designs, methodology, medical terminology and clinical epidemiology; Highly proficient in at least one of the following: SAS, STATA or R/S-plus and the ability to become proficient in others; Excellent staff management and personal communication skills with fluency in written and oral English; A high level of decorum in matters relating to confidential information.

DATA ANALYST will work in a team under the guidance of the Biostatistician to complete SAPs involving complicated longitudinal registry data. Applicants from the Houston, TX Metro Area are strongly encouraged to apply. Responsibilities: Carries out complex statistical analyses (including simulation & programming) with minimal supervision according to the SAP; Prepares written reports and summarizes data; Utilizes various database management systems. Qualifications: Master's degree in Biostatistics, Statistics, Bioinformatics, Mathematics or related field; Four years of experience (6 years preferred) analyzing complicated longitudinal datasets using Stata or SAS.

All positions require a home office with Internet connectivity, participation in weekly conference calls; ongoing CITI GCP certification; and the ability to travel domestically and internationally with a valid passport.

Qualified candidates may submit their resume with cover letter and salary requirements to: HR@CORRONA.org. Resumes unaccompanied by cover letters may not be considered. To learn more about CORRONA, please visit our website: www.corrona.org

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David Draper, Ray Carroll,
Russell Wolfinger,
and many others.



To receive a brochure or registration
information, contact Amy Royer at:
(801) 422-4506
aroyer@stat.byu.edu

You can also register online at
<http://statistics.byu.edu>
Early registration deadline is
May 17th, 2013

Come and enjoy the beauty of the Wasatch Mountains
as you increase your knowledge in this impressive setting!

Nevada

■ The school of nursing at UNLV, a CCNE accredited program at undergraduate and graduate levels, invites applicants for a full-time 9-month position to teach research and statistics courses and to provide statistical consultation to our faculty and graduate students. This position may be filled by an assistant/associate/full professor (non-tenure or tenure-track). For position description and application details, visit <http://jobs.unlv.edu> or call (702)895-2894. EEO/AA Employer.

New York

■ Memorial Sloan-Kettering Cancer Center is seeking a doctoral-level biostatistician with an interest in developing and applying statistical methods to important problems in cancer research to join an existing group of 19 faculty. Send CV and contact information for three referees to Colin B. Begg, PhD, Biostatistics Search, MSKCC, 307 East 63rd St., New York, NY 10065 or wongk1@mskcc.org. MSKCC is an Equal Opportunity Employer.

■ Visiting assistant professor position in statistics at Cornell. Statistical science at Cornell University invites applications for a two-year visiting assistant professor position. Individuals with PhD in statistics and a strong foundation in statistical theory and/

Department of Statistics Columbia University Faculty Position Starting Fall 2013

The Department of Statistics invites applications for a faculty position in applied/interdisciplinary statistics to begin July 1, 2013. The position may be filled at any rank from tenure-track assistant professor through full professor with tenure. A Ph.D. in statistics or a related field and commitment to high quality research and teaching in statistics and/or probability are required. Candidates will be expected to sustain an active research and publication agenda and to teach in the departmental undergraduate and graduate programs. The department currently consists of 22 faculty members, 40 PhD students, and over 100 MS students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: <http://www.stat.columbia.edu>

Please initiate the application process at <https://academicjobs.columbia.edu/applicants/Central?quickFind=56982>

At Columbia's Recruitment of Academic Personnel (RAPS) secure website linked above, applicants at all ranks are asked please to create the applicant profile and upload the Curriculum Vitae. The completion of this brief process in RAPS is indicated by a confirmation number which the applicant should retain.

To complete the application process, applicants at all ranks must submit materials through Head Hunter at <https://editorialexpress.com/hhc>. The Department of Statistics positions will be visible in Head Hunter by clicking on "Positions" after logging in to the Candidate Application Interface.

In Head Hunter, applicants for this position at the assistant professor or non-tenured associate professor rank should submit a cover letter, Curriculum Vitae, a brief statement of their research plans, one writing sample, and arrange for three letters of reference to be sent on their behalf. Applicants at the tenured associate professor or full professor rank should submit a cover letter, Curriculum Vitae, and a statement of research.

Please note that an application will not be considered complete unless the process is completed in both Head Hunter and the Columbia RAPS system.

Inquiries may be made to dk@stat.columbia.edu

Review of applications begins on December 15, 2012 and will continue until the position is filled.

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General responsibilities include identifying appropriate statistical techniques for implementation, programming in C, testing and documenting the software, and giving presentations to statistical audiences. Positions require a PhD in statistics, biostatistics, applied mathematics, numerical analysis or a related field, as well as specialization in one of the areas listed below.

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Design of experiments
Finite mixture models

Joint Modeling
Marketing research methodology
Missing data methods
Model selection methods

Statistical graphics
Statistical reliability analysis
Structural equation methods
Survey data analysis

Please visit our career site, www.sas.com/jobs or contact Lyn Adkins at Lyn.Adkins@sas.com

Kansas State University Manhattan, Kansas

The Department of Statistics seeks applicants for the position of Department Head. The Head will oversee academic programs and promote theoretical, applied and collaborative research and statistical consulting within the department and represent Statistics to a wide constituency outside of the department.

Qualifications include a Ph.D. in Statistics or a related field, an active research program, and a record of scholarship and teaching sufficient to be tenured at the level of professor or associate professor. Interested persons should send via e-mail a single PDF file with a letter of application that includes a discussion of qualifications as noted above and a statement of administrative philosophy, together with a detailed CV and names of 3 references to: solt@k-state.edu. Review of applications will begin January 14, 2013, and will continue until position is filled.

For more information, please visit <http://www.ksu.edu/stats> or contact Dr. Amit Chakrabarti, Search Committee Chair, at: amitc@phys.ksu.edu



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

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NORC is actively seeking statisticians, survey methodologists, statistical programmers, data managers, survey directors, and social scientists with advanced training or experience in survey research or survey operations. New staff will be based in our Chicago, IL or Bethesda, MD offices. To apply for employment, please visit our website at:

<http://norccareers.silkroad.com>

NORC is an affirmative action, equal opportunity employer that values and actively seeks diversity in the workforce.

or methodology doing outstanding research, should apply at AcademicJobsOnline. Cornell University is a recognized EEO/AA employer and educator.

■ New York University Stern School of Business Statistics Group, tenure-track assistant professor appointment in statistics. Candidates should have evidence of boundary-spanning interests across fields that reflect significant interfaces of statistics with areas of relevance in a business school. Expected that candidate will be productive researcher and effective teacher at both undergraduate and graduate levels. See <http://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/academic-departments/ioms/faculty-staff/position-openings/statistics/index.htm> for details, including information about application procedure. www.stern.nyu.edu/ioms. New York University is an Affirmative Action/Equal Opportunity Institution.

Ohio

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

■ Mathematics Faculty Position: Baldwin Wallace University. The department of mathematics and computer science announces a tenure-track faculty position in mathematics beginning in August, 2013. PhD in statistics or applied mathematics is preferred. Previous teaching experience is highly desirable. Learn more about the position and Baldwin Wallace University. Visit www.bw.edu/resources/hr/jobs. Review of applications will begin on date TBD and continue until the position is filled. EOE.

Oregon

■ Biostatistician Investigator: The Center for Health Research, Portland, Oregon, is hiring an investigator to be an integral member of CHR's biostatistics core. She/he will collaborate on grant proposals, guide analyses, and prepare papers for publication. The successful candidate is highly experienced with multiple research designs (observational, comparative effectiveness, pragmatic trials, RCTs) and advanced statistical methods. For information please contact Nancy Perrin (nancy.perrin@kpchr.org). EOE.

Mississippi State University Mathematics & Statistics Faculty Position in Statistics

Applications are invited for one tenure-track position at the rank of Assistant or Associate Professor starting in August 2013. Requirements include a doctoral degree in statistics or biostatistics, demonstrated success in research, experience directing theses and dissertations and a commitment to effective graduate and undergraduate teaching. Salary is competitive and commensurate with qualifications. Candidates in any area of statistics or biostatistics are encouraged to apply. The Department of Mathematics and Statistics offers an M.S. degree in statistics and a Ph.D. degree in mathematical sciences. Opportunities exist for interdisciplinary research and consulting in applied areas such as agricultural sciences, engineering, forestry, geosciences, remote sensing, and biomedical research.

Send a detailed resume, transcripts, a summary of research plans, a statement of teaching philosophy, and three letters of recommendation, at least one of which addresses the applicant's teaching to:

Chair, Statistics Search Committee
Department of Mathematics & Statistics
P. O. Box MA
Mississippi State, MS 39762-9715

Further information about the department can be found at www.msstate.edu/dept/math. All applicants must also complete the online Personal Data Information Form located at www.jobs.msstate.edu. Select "Create Application" and choose "Personal Data Information Form". (Apply to PARF #6926).

The screening process will begin on December 1, 2012 and will continue until the position is filled.

Mississippi State University is an AA/EOE.

Pennsylvania

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

■ Alcoa Corporation is seeking applied statisticians w/advanced degrees and preferably some experience for exciting, new opportunities to apply data-mining and traditional techniques to analyze and report on large corporate data sets. Outstanding collaboration and communications skills are essential for working in the high-visibility decision analytics group within the talent management CoE. Applications must be submitted online at our career center: www.alcoa.com (Job numbers 10523 AND10524) EO/AA Employer.

■ MS biostatistician - Consulting on biomedical research projects and performing data analysis for NIH-sponsored, multicenter, clinical trials in eye disease. Experience in team-oriented research groups, excellent communication skills, proficiency in SAS preferred. Spring posting for experienced applicants or outstanding 2013 graduates. Send CV and names of 3 references to Maureen Maguire, PhD (maguirem@mail.med.upenn.edu) University of Pennsylvania, 3535 Market Street, Suite 700, Philadelphia PA 19104-3309. EOE/AA Employer.

■ The statistics department at Temple University seeks tenure-track and non-tenure track candidates at the assistant, associate and/or full professor levels, starting in September 2013. Candidates must have a PhD in statistics, a record or potential of publishing in top-tier journals, evidence of teaching, and strong theory/application background. Apply electronically to William Wei, stat.recruiting@temple.edu, with cover letter, CV, teaching evidence & three recommendation letters. www.fox.temple.edu/dept/statistics. Temple University is an Equal Opportunity/Affirmative Action Employer.

■ The Wharton Statistics Department, University of Pennsylvania, has one or two tenure-track or tenured positions at any

Open-rank tenure-track faculty positions Department of Biostatistics and Computational Biology University of Rochester

The Department of Biostatistics and Computational Biology (DBCBC) at the University of Rochester is seeking highly qualified applicants for several open rank tenure-track faculty positions. Academic rank will be commensurate with credentials. The Department has a strong preference for attracting applicants with dual interests in the development of statistical methodology (theory and/or computation) and collaborative scientific research, including clinical trials (especially design and analysis of early phase and adaptive trials); Big Data (especially high-throughput -omics and imaging data) and closely related areas (e.g., biomedical informatics) and health services (e.g., comparative effectiveness and outcomes research). Especially encouraged to apply are faculty with a strong interest in developing new initiatives that reflect the priorities for this search.

The Department has 29 faculty members with strengths in several methodological research areas. We offer graduate degree programs leading to a Ph.D. and M.A. in Statistics as well as a M.S. in Medical Statistics. We maintain an active postdoctoral program supported by research and training grants and very strong collaborative relationships with many other departments, centers and units throughout the University of Rochester Medical Center (e.g., Neurology, Public Health Sciences, Environmental Medicine, Cardiology, Biomedical Genetics, Psychiatry, Orthopedics, Cancer Center, and the Clinical and Translational Sciences Institute).

The University of Rochester is one of the nation's leading private research universities; its Medical Center is consistently ranked as one of the nation's leading academic medical centers. Rochester is home to several other private institutions of higher learning and continues to be world-renowned as a center of activity for imaging and optics. In 2010 *Forbes* magazine rated Rochester as the 3rd best place to raise a family and in 2012, *Kiplinger's Personal Finance* magazine rated Rochester as the 5th best city for families, citing low cost of living, top public schools, and a low unemployment rate. Included among the many amenities available to its residents are a vibrant music and arts community, a wide variety of excellent restaurants, eight professional sports teams, and numerous outdoor recreational activities.

Position Qualifications: Doctoral degree in biostatistics, statistics or strongly related discipline. Candidates must have excellent oral and written communication skills. Candidates for Associate and Full Professor positions should also have an established track record of peer-reviewed publications, demonstrated success in attracting extramural research funding, and evidence of teaching excellence at the graduate level. The University of Rochester is an affirmative action/equal opportunity employer. Women and minority candidates are strongly encouraged to apply.

Application procedure: All applicants should send a cover letter, a detailed statement of research and teaching interests, and an up-to-date, complete curriculum vitae. Applications for Assistant and Associate Professor should include at most three representative publications and must additionally arrange for three letters of reference to be sent directly to the email or mailing address below. Applications for Full Professor should include the name and contact information of four references that have agreed in advance to provide a reference letter. With the exception of reference letters, all application materials should be emailed in a single PDF file to: FacultySearch@bst.rochester.edu.

Reference letters may be emailed to FacultySearch@bst.rochester.edu or sent by surface mail to:

Search Committee Chair
c/o Malora Zavaglia
Department of Biostatistics and Computational Biology
University of Rochester Medical Center
601 Elmwood Avenue, Box 630
Rochester NY 14642

Review of applications will begin on November 1, 2012 and continue until positions are filled.

Survey Sampling Statistician

EOE

Westat is an employee-owned corporation headquartered in the suburbs of Washington, DC (Rockville, Maryland). We provide statistical consulting and survey research to the agencies of the U.S. Government and to a broad range of business and institutional clients. With a strong technical and managerial staff and a long record of quality research, Westat has become one of the leading survey research and statistical consulting organizations in the United States.

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

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

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Survey Sampling Statistician

Job Code 5307BR

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

Westat offers excellent growth opportunities and an outstanding benefits package including life and health insurance, an Employee Stock Ownership Plan (ESOP), a 401(k) plan, flexible spending accounts, professional development, and tuition assistance. To apply, go to www.westat.com/jobs and enter **5307BR** in the space provided.



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level, appointment beginning July 2013. Applicants should show outstanding capacity in research and teaching. Applicants must have a PhD (expected completion by June 30, 2014, is acceptable) from an accredited institution. Please visit our website to apply: <https://statistics.wharton.upenn.edu/recruiting/facultypositions>. Questions should be sent to Abba Krieger at statistics.recruit@wharton.upenn.edu. The University of Pennsylvania is an equal opportunity affirmative action employer; women and minority applicants are strongly encouraged to apply.

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

South Carolina

■ Tenure-track faculty positions (targeted assistant professor, possibly associate or



A Spectrum of Short-Term Research Opportunities in Statistics

Graduate Intern Program (*No Application Deadline*): Primarily for individuals being trained as statisticians and related professionals who have completed the first year of a master's or Ph.D. degree program.

- Collaborative research for the 12-week to 1-year period is conducted at the U.S. Census Bureau.
- Details: http://www.census.gov/hrd/www/jobs/stu_temp.html.

Dissertation Fellowship Program (*Application Deadline—February 28*): Primarily for doctoral candidates in statistics or related areas who propose for their dissertation to investigate research topics of primary interest to the U.S. Census Bureau.

- Research is conducted and completed at the selected fellow's university/institution.
- Details: www.census.gov/srd/www/DissertationFellowshipTopics.pdf or contact tommy.wright@census.gov.

Postdoctoral Research Program (*Application Deadline—January 31*): Primarily for statisticians and related professionals who have held their Ph.D. (or equivalent) no more than 6 years before the commencement of work as a postdoctoral researcher.

- Collaborative research for the 2-year appointment is conducted at the U.S. Census Bureau.
- Details: <http://www.census.gov/hrd/www/jobs/prp.html> or contact tommy.wright@census.gov.

ASA/NSF/Census Research Fellowship Program (*Application Deadline—December 10*): Primarily for statisticians and related professionals who have recognized research records and considerable expertise in their areas of proposed research.

- Collaborative research for the 6–12 month period is conducted at the U.S. Census Bureau.
- Details: www.census.gov/srd/www/fellweb.html or contact tommy.wright@census.gov.



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The Cincinnati position will be a part of project teams that support a number of our global business units including Health Care, Fabric and Home Care, Baby Care, Family Care, and Feminine Care. Primary responsibilities for this role include delivering leading edge statistical support for consumer research and linking technical data to consumer data.

Job Requirements:

- Ph.D. in Statistics and must be comfortable and proficient with statistical software (e.g., SAS, JMP, or R)
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Apply at www.census.gov, click on Jobs@census, Headquarters and NPC Employment Opportunities, Mathematical Statistician

The U.S. Census Bureau is an Equal Opportunity Employer.



full) for fall 2013 in statistics or probability. Doctorate or equivalent is required for the tenure-track positions. Vita, three reference letters, teaching and research statements should be electronically filed at www.mathjobs.org. Further information about the department is available at www.math.clemson.edu. Clemson University is an AA/EO.

Texas

■ PhD Biostatistician. Assistant or associate professor to work in Division of Clinical and Translational Sciences (DCTS), within Internal Medicine at The University of Texas Health Science Center at Houston (UTHealth). All areas of statistics considered. Interested candidates may apply for the position at jobs.uth.tmc.edu/applicants/Central?quickFind=91380. Questions may be directed to M. H. Rahbar, Director, DCTS, via Mohammad.H.Rahbar@uth.tmc.edu. UTHealth is an EO/AA employer. M/F/D/V.

Wisconsin

■ The departments of population health sciences and biostatistics & medical informatics at the University of Wisconsin (Madison) school of medicine & public health seek applicants for a joint faculty position at the (tenure-track) assistant or (tenured) associate rank. PhD in statistics, biostatistics or related field and expertise in clinical investigation, epidemiologic studies or health services research is required. Additional information found at: www.ohr.wisc.edu/pvllpv_074852.html. EOE.

International

■ The Institute of Statistics at the National Chiao Tung University invites applications for a tenure-track faculty position in all areas of statistics. The rank will be determined by the qualifications of successful candidates. Reviews for the position begin January 1, 2013, and will continue until the position is filled. See www.stat.nctu.edu.tw for more information. EOE.

■ Non-tenure track teaching position for business statistics in the Dept. of ISOM. Applications will be accepted until the position is filled. Excellence in teaching, and PhD required by employment start-date. The successful applicant is expected to play an important role in teaching and developing business statistics courses for undergraduate and MBA programs of the business school. Submit CV and three referees to: stat11@ust.hk. jobs.amstat.org/hr/jobdetail.cfm?job_id=5009800. EOE. ■

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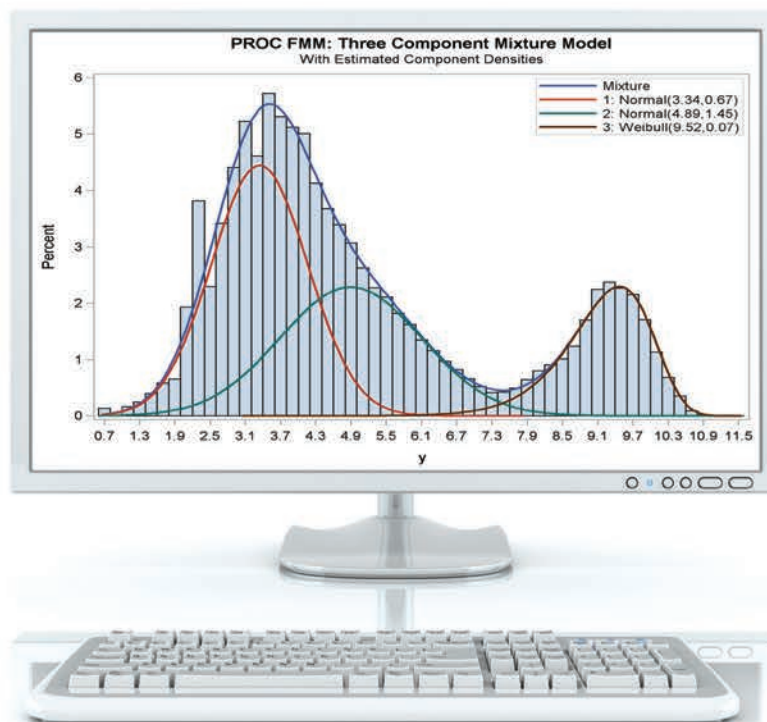
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