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

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13 SCIENCE POLICY Growing Numbers of Stats Degrees

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.



Pierson

Contributing Editor

Steve Pierson earned his PhD in physics from the University of Minnesota. He spent eight years in the physics department of Worcester Polytechnic Institute before becoming head of government relations at the American Physical Society.

16 FUNDING OPPORTUNITIES Army Funding Opportunities in Probability and Statistics

This column highlights research activities that may be of interest to ASA members. This article includes information about new research solicitations and the federal budget for statistics. Suggestions for future articles may be sent to the *Amstat News* managing editor at megan@amstat.org.



Martinez

Contributing Editors

Wendy Martinez worked as a researcher and senior statistician in the Department of Defense for more than 20 years. During that time, she managed research projects ranging from basic research to applied development. She is now the director of the Mathematical Statistics Research Center in the Office of Survey Methods Research at the Bureau of Labor Statistics.



Wilson

Alyson Wilson is a research staff member at the Institute for Defense Analyses Science and Technology Policy Institute. Her research has focused on defense and security problems for almost 20 years, including positions at Los Alamos National Laboratory and Iowa State University.

Online Articles

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

If you are going to this year's **Joint Statistical Meetings** and planning a more in-depth visit to Québec, ASA member and Montréal resident Marc Bourdeau compiled a list of suggestions in his article, "Montréal: Suggestions for Excursions." Read it online at <http://magazine.amstat.org>.

More than 150 undergraduate mathematics and statistics majors, together with more than 75 of their faculty mentors, met in Phoenix, Arizona, from November 2–4 to learn about opportunities in graduate school in the mathematical sciences. The conference was sponsored by the **National Alliance for Doctoral Studies in the Mathematical Sciences** and made possible by a grant from the National Science Foundation Division of Mathematical Sciences. To read more about the conference and to see photos, visit <http://magazine.amstat.org>.

In light of the International Year of Statistics (Statistics 2013), the **University of Louisville School of Public Health and Information Sciences** recognized the important role of biostatisticians in promoting better health when faculty and students celebrated National Public Health Week April 1–7. Find out how they celebrated at <http://magazine.amstat.org>.

The White House Office of Science and Technology Policy and the National Science Foundation are accepting nominations for PAESMEM, the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. Complete nominations are due on June 5. Contact paesmem@nsf.gov if you have questions or visit www.nsf.gov/PAESMEM for information about the program and preparing nomination materials. Details also can be viewed at <http://magazine.amstat.org>.

Sadly, **George E. P. Box** passed away on March 28. To read about his life, visit the blog tribute by Bradley Jones at <http://blogs.sas.com/content/jmp> or the tribute written by John Hunter at <http://management.curiouscatblog.net/2013/03/28/george-box>.

Dayanand N. Naik, statistics professor at Old Dominion University, passed away on October 26, 2012. To read more about his life, visit <http://magazine.amstat.org/blog/category/membernews/amstatpeople/obits>.

columns

18 **Getting Closer**

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.



Wasserstein

Contributing Editors

Ron Wasserstein is the ASA's executive director and president of Kappa Mu Epsilon National Mathematics Honor Society. Previously, he was vice president for academic affairs at Washburn University.



Chuang-Stein

Christy Chuang-Stein is the chair of the 175th Anniversary Steering Committee and head of the Statistical Research and Consulting Center at Pfizer. She served as an ASA vice president from 2009–2011.

19 **MASTER'S NOTEBOOK** **Finding the Balance**

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



Gehrke

Contributing Editor

Amy Gehrke earned her bachelor's degree from The George Washington University, majoring in political science with a minor in statistics. She completed her master's degree in applied statistics from Old Dominion University. She currently works at Mathematica Policy Research in Washington, DC.

20 **STATtr@k** **Attending Your First JSM—Working Hard and Playing Even Harder**

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.



Shipp

Contributing Editor

Stephanie Shipp is a senior research staff member at the IDA Science and Technology Policy Institute in Washington, DC. Before joining STPI, she was a member of the U.S. Federal Senior Executive Service and director of the Economic Assessment Office in the Advanced Technology Program at the National Institute of Standards and Technology.

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Promoting the Practice and Profession of Statistics—ASA Public Relations Coordinator

Jeffrey A. Myers

For the first few decades after I joined the ASA in 1980, I was often heard lamenting (ask my husband) that, despite the importance of our discipline to science and society, we statisticians seemed reluctant to promote ourselves in a significant way to fellow scientists and the public. And that, although our professional societies were ideally positioned to do this, they didn't seem to be. Of course, it's one thing to talk, which is all I did, and another to take initiative.

In 2006, someone did. Then ASA Executive Director Bill Smith recognized the need for improving the ASA's public relations capabilities. He hired a part-time consultant, Rosanne Desmone, who, for six years, helped with developing press relations, reorganizing the ASA's "media expert" list, and improving the ASA's communications with the media in general. She also helped publicize JSM, working diligently to attract the media to the world's largest annual gathering of statisticians.

Over the past several years, the burgeoning media focus on data has intensified calls from many of us for the ASA to take an even more active role in publicizing the contributions of statistics and statisticians. In 2012, the ASA staff and board leadership acknowledged that this level of outreach required full-time public relations assistance. The upcoming International Year of Statistics, with the ASA's 175th anniversary right behind, served as the final impetus for the decision to reorganize resources so a full-time public relations coordinator could be hired.

And we were fortunate, indeed. Jeffrey A. Myers joined the ASA in this role in July 2012 with more than two decades of experience in public relations in the Army, insurance industry, and private consulting, outlined in his profile in the April issue. I have had the privilege of working with Jeff on several initiatives and am excited to see how his efforts are already paying off. I asked him to discuss his activities and the challenges and opportunities he sees for our profession.

What are the similarities and differences between public relations activities in your previous positions and those you are undertaking for the ASA?

First, I am excited to be at the ASA. It is a great organization with active members, and I very much enjoy working with the volunteers—from the leadership to individual members—and everyone on the fantastic professional staff.

The biggest difference for me, personally, is working in science. Each previous career stop was with a nonscientific organization, although one could argue that insurance can be as complicated. So, that part of the job is an ongoing learning process.

As for the similarities, those abound simply because the tools necessary for effective communication—building relationships, managing media relations, writing press releases, developing promotional items, pitching stories, creating web resources, etc.—remain constant, regardless of the field.

What have you learned about statistics and statisticians, and what do you see as the greatest challenges and opportunities to promoting the field and the ASA to the public and the media?

I have learned that statistics is a crucial part of our everyday lives and that statisticians are passionate about their profession. These two elements are essential to telling the story of statistics to the media—the former because it personalizes statistics and the latter because statisticians, who are experts in their chosen field, are excellent spokespeople.

The biggest challenges I see are the public's limited understanding of statistics, the myth that statistics is sports numbers, and the "Intel Inside factor." In this phenomenon, statistics is part of a larger body of work, for instance a scientific discovery, and it isn't easy to distinguish the statistical contribution from that of another scientific discipline. We must separate the contributions of statistics to scientific advancements and breakthroughs, for example the role of statistics in drug development, and relay these real contributions to the media and the public. These interesting, compelling, and timely stories



Marie Davidian



Myers

will help carry our message to the public.

Conversely, there are positives for increasing interest in statistics, namely the Big Data movement, the positive publicity Nate Silver has generated, growing interest in statistics by high-school and college students, and the International Year of

Statistics, which is a global public relations campaign that is raising awareness of statistics.

Describe some of the things you have done and plan to do to raise awareness of statistics and statisticians.

One thing is Statistics2013, but I will expand on this later.

Another is building relationships and pitching statistics stories to the media. We are off to a strong start in getting statistics in front of the public through the media. For instance, the ASA is hosting a recurring statistics blog on the Huffington Post Science page. This blog places statistics before an influential audience. Additionally, a number of articles have been published by *The Wall Street Journal*, *Boston Globe*, McClatchy Newspapers, and others. And, a couple ASA letters to the editor have been published that corrected mis-statements about statistics.

While we are having initial success, there remains much more work to be done. I want to build new relationships with reporters and cultivate interesting stories that will appeal to the media and the public. Last, we must identify ASA members who are natural communicators and arm them with the knowledge and tools to be effective spokespeople for the statistics profession.

What do you see as some of the major accomplishments of the International Year of Statistics campaign so far, and what future accomplishments do you hope to see by the end of 2013?

The first significant accomplishment is that nearly 1,900 organizations in 121 countries have joined the campaign, and many are carrying the message to the public. This multiplying effect has greatly expanded the messaging reach far wider than the ASA and other founding organizations could do alone. A couple countries doing an incredible public relations job are Bulgaria and Mexico. And, we have numerous links—from all over the world—to Statistics2013 stories.

Also, we have built an information-packed, public-oriented website that is educating people around the world about statistics. This website will be beneficial to the ASA and other statistics organizations beyond 2013.

Perhaps the largest accomplishment to date is that the campaign is engaging statistical organizations in public outreach activities, many for the first time. This is good from the perspective of getting organizations accustomed to communicating and working with the media.

In the past, statistics and statisticians have not gotten the greatest press. Recently, that seems to have changed. Have you found the media to be receptive to your efforts to promote the field? What are the biggest misconceptions the media have about statistics and statisticians?

While I'd like to claim credit for the favorable media perception, Nate Silver's successes predicting the outcome of the last two presidential elections have helped make editors and reporters more receptive to statistics. However, the media, while more knowledgeable, still does not fully understand statistics. That's where statisticians enter the equation. It is critical for them to be ambassadors for the profession and to be effective in message creation and delivery.

Unfortunately, many less-enlightened reporters still perceive statisticians as part of the "nerdy pocket-protector set." I think as we introduce reporters to statisticians, they will gain a positive impression of statisticians and their work.

You cannot single-handedly alter the public perception of statistics. How can ASA members become involved in shaping the image of statistics and statisticians on the local, national, and international levels?

It is essential that every ASA member participate in building a better image for the profession. It can be as simple as contacting a reporter about a story. This outreach establishes you as a source for the reporter on statistics issues. You can write a letter to the editor regarding a story that ran in your local paper. Seek out opportunities to speak about statistics at public forums—for example, civic organizations and local government meetings—that reporters often attend. You also can contact me for assistance or advice for working with the media.

By being active, ASA members can balance the public narrative about statistics and ensure their voice is being heard by the media and the general public. Otherwise, the "lies and damn lies" about statistics will continue unchecked.

I hope you will embrace Jeff's call to join the ASA's outreach efforts! If you have ideas or need help, you can reach him at jeffrey@amstat.org.

Marie Davidian

Call for Conference on Statistical Practice Abstracts

A limited number of presentation abstracts submitted between May 14 and June 25 will be accepted for the 2014 Conference on Statistical Practice, to be held in Tampa, Florida, from February 20–22. Abstracts can be along any one of the following four broad themes:

Theme 1: Communication, Impact, and Career Development

The objective for this theme is to help participants develop skills and perspectives that will improve their personal effectiveness as statisticians in their roles as managers, strategists, consultants, and collaborators. We are seeking topics and presentations that will enable participants to return to their jobs with new ideas, techniques, and strategies to improve their ability to communicate effectively, have a greater impact on their organizations, and advance their careers. Potential topics include presentation and oral communication skills, career advancement and development, organizational impact, best practices in consulting and collaboration, leadership and management skills, and statistical ethics.

Theme 2: Data Modeling and Analysis

The objective for this theme is to provide conference participants with practical knowledge and techniques related to obtaining, creating, modeling, and analyzing data sets of various forms and sizes through the application of established statistical methods. Presentations should feature information relevant to all practicing applied statisticians, regardless of industry or field of expertise. Potential topics include linear models and modern regression methods; experimental design; econometrics and time series methods; categorical data analysis; sampling design, administration, and analysis; survival and reliability methods; methods for missing data; and nonparametric methods.

Theme 3: Big Data Prediction and Analytics

The objective for this theme is to look at current statistical and algorithmic practice and methods for solving prediction, decisionmaking, classification, and pattern recognition problems from extremely large, unconventional, and/or complex data. These include problems in business analytics and data mining. Presentations involving large data applications and topic surveys focused on tools and algorithms for large data applications are welcome. Potential topics include data mining and business



analytics applications, exploring and modifying big data, topic surveys, ensemble modeling, model validation, and comparison approaches.

Theme 4: Software and Graphics

The objective for this theme is to help participants employ analysis or visualization methods using new or existing software. Presentations will focus on the use of computer software to describe, display, or analyze data. Discussions may involve new visualizations, new software, or methods of using existing software more effectively to display and explore data. Potential topics include software to describe, display, or analyze data and visualization methods to display or explore data.

Submission details are at www.amstat.org/csp. ■

SPECIAL INTEREST GROUP Proposed New Section for Medical and Diagnostic Devices

The Special Interest Group for Medical Devices and Diagnostics (SIGMEDD) encourages interested ASA members to support the formation of a new section for medical and diagnostic devices.

To do this, go to www.surveymonkey.com/s/NL5RF2C and enter your name, ASA ID number, and email address.

The SIGMEDD interest group was established more than five years ago by the Council of Sections, and SIGMEDD has actively participated in a number of ASA meetings. As has been the case for all recent JSMs, SIGMEDD organized a number of topic-contributed sessions. SIGMEDD members also have played a major role in planning the annual ASA Biopharmaceutical Section's FDA-Industry Statistics Workshop.

To view SIGMEDD's adopted charter and past activities, or for more information about SIGMEDD, visit www.amstat.org/sections/sigmedd.

Stats for Scientists Proposal Draws ASA's Attention

Jeffrey A. Myers, ASA Public Relations Coordinator

We welcome the opportunity to look for ways to meet the statistical needs in the chemistry curriculum through collaborations between statisticians and chemists.

A new proposal to establish a statistics curriculum within the chemistry departments of U.S.-based colleges and universities to address the specific needs of chemistry majors has drawn the attention of the American Statistical Association.

The proposal was first published in the January issue of the *Journal of Chemical Education* (<http://pubs.acs.org/doi/full/10.1021/ed300334e>) and then reported in summary by *Science* magazine (www.sciencemag.org/content/339/6120/twil.full#compilation-1-6-article-title-1) in the Editor's Choice section of its February 8 issue.

In making his case in the *Journal of Chemical Education* article, Nicholas Schlotter, an assistant professor of chemistry at Hamline University in St. Paul, Minnesota, writes: "Because of the large number of courses required for the undergraduate chemistry major, it seems unlikely that requiring a course on statistics will be practical at most institutions. Additionally, it is unlikely that the typical high-school education will address the needed statistics or the software training to prepare students for the chemistry courses. Therefore, the chemistry faculty must teach the statistics needed by the majors."

Schlotter goes on to advocate: "The chemistry community needs to have a discussion about statistics and to decide what statistics should be taught to the undergraduate chemistry major. A detailed statistics curriculum needs to be embedded in chemistry courses. ... All of the stakeholders should be involved in the discussion: undergraduate programs, graduate programs, businesses, national science organizations, professional programs, and government laboratories."

While the ASA is applauding Schlotter's acknowledgement that statistics is essential to

chemistry science students, it also is weighing in to ensure the ASA and statistics community is a part of the discussion about the best ways to meet the statistical needs in the chemistry curriculum.

In a letter to the editor of *Science*, ASA President Marie Davidian wrote, "We applaud [Schlotter's] recognition of the importance of statistics and [Schlotter's] call for a discussion of integrating this principle within the undergraduate chemistry curriculum.

"We welcome the opportunity to look for ways to meet the statistical needs in the chemistry curriculum through collaborations between statisticians and chemists. It can be done; successful models can be emulated. A national panel of statistics and chemistry educators to develop collaborative solutions could be a good way forward."

Separately, a specially appointed ASA working group is reaching out to the *Journal of Chemical Education*, Schlotter, and other chemistry educators to establish a framework for collaboration between statisticians and chemists.

In a planned letter to the editor of the chemical publication, the workgroup's members write, "Many scientists identify knowledge of statistics as a crucial need for students' quantitative skills because statistical reasoning is pervasive in current scientific practice and is expected to increase as reliance on data-driven methods becomes even more prevalent."

The group also notes that interest in statistics is growing at the high-school level. "Statistics has not traditionally been part of the mathematics curriculum, but the pre-college scene is changing dramatically: Forty-five states have adopted the Common Core State Standards, which has a strong statistics strand in grades 6–12, [and] there has been a dramatic rise in the number of U.S. high-school students completing Advanced Placement Statistics."

In fact, the number of high-school students taking the Advanced Placement Statistics exam is up 23,000 students since 2011, and last year surpassed the 1 million mark since the program was established in 1997.

The ASA will continue to monitor this emerging issue and work with Schlotter, chemistry and statistics educators, and chemistry organizations to develop a statistics curriculum that will ensure chemistry students receive the training in statistics principles they need to be successful in their careers. ■

Member Spotlight

Marcia Levenstein

Megan Murphy, ASA communications manager

When Marcia Levenstein entered the Massachusetts Institute of Technology, her plan was to become a doctor, but during her third year she heard about a biostatistics course her roommate at the time was taking, and she was intrigued. “It combined math and biology, which was great for me,” she said. “My father suggested I consider graduate school in biostatistics, so I sent out my applications and followed this path. It turned out to be a great fit for me, combining two of my interests and primarily leveraging my math capabilities.”

From there, she earned her master’s in biostatistics at The University of North Carolina and her PhD in biostatistics from the Harvard School of Public Health. In December of 2012, after several years working in clinical research arena, she earned a master’s of bioethics from the University of Pennsylvania. “Throughout most of my career, I had focused on statistical aspects of clinical research and thought a master’s in bioethics would give me a new lens through which I would consider clinical research,” Levenstein said. “Bioethics provided me with an expanded framework and set of tools for analyzing issues, coupled with a broad understanding of emerging bioethical issues that are relevant to clinical research.”

After graduate school, Levenstein landed a job as a biostatistician for an epidemiological research company, The American Health Foundation. “This was founded by a physician who did early epidemiological research identifying the link between cigarette smoking and lung cancer,” she said. “The company did both epidemiological as well as scientific research in humans animals.”

Although she was mostly involved in epidemiology, she did have the opportunity to work with the scientific researchers, as well. “It provided the opportunity to apply what I had learned in graduate school to real-world questions. We were able to see similar findings in both the epidemiological and scientific research.”

While working at The American Health Foundation, Levenstein also began a multi-year consulting relationship with a group of dermatologists in New York. She provided statistical support



Levenstein

for their observational research. “As a consultant, the key skill I developed was how to work independently. I didn’t have a statistical manager to review my work. I learned how to interact with scientists/physicians to define their objectives so I could translate them into statistical questions we could answer,” Levenstein said. “Since I was working with multiple researchers, I learned how to jointly prioritize the work.”

Levenstein currently works at Pfizer as vice president of statistics and continues to sharpen her craft. While she directly supported clinical trials as a project statistician this included the programming skills she learned in graduate school. “A statistician needs to provide direction to programmers and data managers to ensure that data collected meets the needs of the clinical research program,” she said. “To do this, the statistician needs to have a working knowledge of programming to be able to provide or review programming specifications to a statistical programmer or do the programming themselves. They also need to understand the implications of data management decisions on data quality and integrity so they are comfortable that the data being used are fit for purpose.”

While increasing her technical knowledge at Pfizer, Levenstein also developed a broader set of skills she would not have had, had she limited herself to just statistical roles. “At Pfizer, I had the chance to work on global teams and be successful in areas outside of statistics. I have led cross-functional departments, including global biometrics groups and development operations,” she said. “It is important to be able to lead groups and influence without authority. Developing strong management and leadership skills is critical to advancing through a leadership career path.”

When asked what additional skills were needed to advance as a clinical statistician, she noted, “strong statistical skills, understanding of clinical trials, problemsolving skills, good communication and collaboration skills.”

Levenstein also advised learning interpersonal skills. “Be open to understanding nonstatistical aspects that will help you succeed in your job,” she said. “It is important to understand the cultural aspects of your work environment so you can develop strong bonds with colleagues on your teams. Focus on how you can contribute through your statistical knowledge to achieve the team’s goals.”

In addition to communication skills, the clinical statistician needs to contribute to all aspects of the project, not just the technical. “Develops skills necessary to explain technical issues in nontechnical language to clinicians and other team members to influence decisionmaking beyond the individual study level (e.g., content of clinical development plans, determinations that a clinical data package meets submission requirements, recommendations for using aggregated data to answer scientific questions).”

Levenstein continues to improve health care by combining her interest in biology and math. She has collaborated with a number of innovative scientists and highly motivated individuals with the common goal of bringing valued medicines to patients; however, she also knows statistics plays a key role in understanding medicine. “It is critical for us to continue to expand our understanding of benefit/risk as medicines are used and help target them to the patients who will gain the most from them,” she said. “Statisticians can influence decisions and contribute broadly to the success of a company. We need to demonstrate that we can bring value to the organization.” ■

NORTHWESTERN ANALYTICS

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ASA/SIAM SERIES

Newest SIAM/ASA Journal Launches with Online Articles

The newest journal from the Society for Industrial and Applied Mathematics, *SIAM/ASA Journal on Uncertainty Quantification (JUQ)*, launched recently with its first seven papers publishing online to Volume 1.

Offered jointly by SIAM and the American Statistical Association, the journal publishes research articles presenting significant mathematical, statistical, algorithmic, and application advances in uncertainty quantification and is dedicated to nurturing synergistic interactions between these and related areas.

Under the leadership of senior editor Max Gunzburger, editors-in-chief James Berger and Donald Estep, and more than 35 others comprising the editorial board, the journal will feature continuous electronic publication at <http://epubs.siam.org>, with complimentary access in 2013.

If the first few research articles are any indication—covering the analysis and quantification of uncertainty in areas as far-reaching as finance, disaster preparedness, and porous media flows—the journal promises great depth and breadth of coverage in uncertainty quantification research.

Some of the papers you will read in *JUQ*'s maiden volume include the following:

- “Mean Exit Times and the Multilevel Monte Carlo Method” by Desmond Higham, Xuerong Mao, Mikolaj Roj, Qingshuo Song, and George Yin
- “Variance Components and Generalized Sobol’ Indices” by Art Owen
- “Formulating Natural Hazard Policies Under Uncertainty” by Jerome and Seth Stein
- “A Nonstationary Space-Time Gaussian Process Model for Partially Converged Simulations” by Victor Picheny and David Ginsbourger
- “Reduced Basis Methods for Parameterized Partial Differential Equations with Stochastic Influences Using the Karhunen-Loève Expansion” by Bernard Haasdonk, Karsten Urban, and Bernhard Wieland
- “A Practical Method to Estimate Information Content in the Context of 4D-Var Data Assimilation” by K. Singh, A. Sandu, M. Jardak, K. W. Bowman, and M. Lee
- “A Posteriori Estimates for Backward SDEs” by Christian Bender and Jessica Steiner

Access the full text of these research articles at <http://epubs.siam.org/journal/SJUQA3>.

Authors are encouraged to submit their uncertainty quantification work for consideration at <http://juq.siam.org>.

Information about the editorial policy, review procedures, and members of the board is available at www.siam.org/journals/juq.php. ■

In-Reach Presentation Slides Available



As part of its continuing efforts to keep members informed about the activities of the American Statistical Association, a set of informational slides has been developed on the following eight topics:

- Accreditation
- ASA Ethical Guidelines for Statistical Practice
- Continuing Education
- Conference on Statistical Practice

- *Significance* Magazine and Website
- STAT|@k
| |
- The ASA as Advocate
- Volunteering in the ASA

There is even a set of slides to help you understand how to use the slides!

The slides have been developed and tested to be used “out of the box.” That is, the slides also include notes so users can give a brief presentation on the topic without having much background on it. If one wants to know more, the slides contain a website that will provide additional details.

To download the slides, log in to ASA Members Only, click on the “My Volunteer Activities” tab, and then click on “Informational Slides About the ASA.”

The slides were developed by the 2012 “In-Reach” Workgroup, chaired by Jeri Mulrow. This work was one of the initiatives of 2012 President Bob Rodriguez. (See <http://magazine.amstat.org/blog/2012/01/01/prescornerjan12>.) We hope you will use these slides to communicate to your local chapter, at a section gathering, in your workplace, etc., to spread the word about how the ASA promotes the practice and profession of statistics. As you use them, please send us feedback so we can make them better, and let us know what additional topics you would like to see. ■



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Modern Methods, Complex Data Featured in May Issue

Hugh A. Chipman, *Technometrics* Editor

Increasingly complex data and sophisticated measurement devices are resulting in a need for new statistical methods. The first two papers illustrate this aptly for reliability and degradation modeling. In “Methods for Planning Repeated Measures Degradation Studies,” **Brian P. Weaver, William Q. Meeker, Luis A. Escobar, and Joanne Wendelberger** consider the design of studies when there are few or no failures and degradation measurements must be collected instead. Test plans for repeated measures are developed based on anticipated statistical modeling with mixed effects linear regression. The effect of the number of units and number of measurements per unit are studied, and two real examples are used to illustrate the methods.

In “Field-Failure Predictions Based on Failure-Time Data with Dynamic Covariate Information,” **Yili Hong and William Q. Meeker** consider models for failure-time data, but with covariates that are changing as units are under study. For example, there are more products being produced with automatic data-collecting devices that track how and under which environments the products are being used. The covariates are incorporated via a cumulative exposure model allowing the prediction of field-failure returns up to a specified future time.

The next two articles consider high-throughput data from biological studies. In “Robust Analysis of High Throughput Screening (HTS) Assay Data,” **Changwon Lim, Pranab K. Sen, and Shyamal D. Peddada**

consider toxicity assays in which thousands of compounds are evaluated by individual dose-response studies. Nonlinear regression models are the quantitative workhorse of such studies, but heteroscedasticity in some—but not all—curves leads to a loss of efficiency. The number of compounds studied means automated methods must be developed to deal with this problem, as well as outliers and influential observations. The paper uses preliminary test estimation that is robust to variance structure, enabling automated and efficient screening decisions. The proposed methodology is illustrated using a data set obtained from the National Toxicology Program.

Although **Ke Zhang, Jacqueline M. Hughes-Oliver, and S. Stanley Young** also consider high-throughput assays, the objective and model used are different. In the scenario considered in “Analysis of High-Dimensional Structure-Activity Screening Datasets Using the Optimal Bit String Tree,” each assay result yields a categorical response (e.g., activity), and the focus is on modeling the relationship between structure of the compound being assayed and the response. A specialized decision tree, and simulated annealing estimation algorithm is developed, and drug discovery applications are used to illustrate the technique.

Image registration, which seeks to map one image onto another of the same scene, is a fundamental task in many imaging applications. Conventional parametric approaches, which typically assume a global transformation function, cannot preserve

singularities and other features of the mapping transformation. **Peihua Qiu and Chen Xing** suggest a more local and adaptive approach in their paper, “On Nonparametric Image Registration.” Both theoretical and numerical studies demonstrate the method is effective in various applications.

A limitation of many nonparametric regression functions is that they rely on a single library of basis functions from which to construct a regression estimate. In “Nonparametric Regression with Basis Selection from Multiple Libraries,” **Jeffrey C. Sklar, Junqing Wu, Wendy Meiring, and Yuedong Wang** propose a more adaptive procedure. By using multiple libraries, the resultant regression models are sufficiently flexible to model functions that consist of both changepoints and local smooth components.

Aggregated functional data arise in situations in which several individual curves are combined and only the resultant overall curve is observed. For example, in studying consumption of electricity over time, individual usage curves are difficult and expensive to obtain, but total usage is readily available. **Ronaldo Dias, Nancy L. Garcia, and Alexandra M. Schmidt** develop “A Hierarchical Model for Aggregated Functional Data” by viewing each aggregated curve as a realization of a Gaussian process with mean modeled through a weighted linear combination of the disaggregated curves. A nonstationary covariance function is used, with inference via a Bayesian approach. The paper focuses on two real examples: a calibration problem for NIR



spectroscopy data and an analysis of distribution of energy among different types of consumers.

Principal component analysis has been variously improved by sparsity constraints on coefficients and robust estimation. However, the two methods have not been simultaneously combined. **Christophe Croux**, **Peter Filzmoser**, and **Heinrich Fritz** develop such a combined approach in "Robust Sparse Principal Component Analysis," yielding both interpretable and stable principal components. By using a sequential computation algorithm, principal components can be obtained for data sets with more variables than observations.

Peter Hall, **Fred Lombard**, and **Cornelis J. Potgieter** develop "A New Approach to Function-Based Hypothesis Testing in Location-Scale Families." They consider scenarios in which two sampled distributions are simply location and scale changes of one another. The test, applicable to both paired data and two-sample data is based on the

empirical characteristic function. The method is demonstrated on two motivating applications in the mining industry.

In "Bayes Statistical Analyses for Particle Sieving Studies," **Norma Leyva**, **Garritt L. Page**, **Stephen B. Vardeman**, and **Joanne R. Wendelberger** consider contexts in which specimens of a granular material are run through a set of progressively finer sieves and the fractions of the specimen weight captured on each sieve are measured to provide the basis for a characterization of the material through its "particle size distribution." The article proposes Bayes analyses based on parsimoniously parameterized multivariate normal approximate models for vectors of log weight fraction ratios and extends this to mixtures of materials and hierarchical modeling in which a single process produces several lots of particles.

In computer experiments, statistical calibration enables scientists to incorporate field data. However, the

practical application is hardly straightforward for data structures such as spatial-temporal fields, which are usually large or not well represented by a stationary process model. In "Fast Sequential Computer Model Calibration of Large Nonstationary Spatial-Temporal Processes," **Matthew T. Pratola**, **Stephan R. Sain**, **Derek Bingham**, **Michael Wiltberger**, and **Joshua Rigler** present a computationally efficient approach to estimating the calibration parameters by measuring discrepancy between the computer model output and field data. The simple-to-implement approach can be used for sequential design, and is applicable to large and nonstationary data.

Finally, in the short note "On the Connection and Equivalence of Three Sparse Linear Discriminant Analysis Methods," **Qing Mai** and **Hui Zou** show that the normalized solutions of three sparse methods are equal for any sequence of penalization parameters. A short demonstration is provided using a prostate cancer data set. ■



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SCIENCE POLICY

Growing Numbers of Stats Degrees

Steve Pierson, ASA Director of Science Policy

There have been numerous anecdotal reports lately of growing numbers of statistics degrees. *The Wall Street Journal's* Numbers Guy, Carl Bialik, wrote his March 1 column (see <http://tinyurl.com/WSJ-Guy>) about the recent surge in interest in statistics in which he had graphs showing the increase of statistics majors/concentrators at the University of California at Berkeley and Harvard. ASA 2012 President Bob Rodriguez had similar information in his August 2012 *Amstat News* column, “A Major Trend: The Rise of Undergraduate Programs in Statistics” (see <http://magazine.amstat.org/blog/2012/08/01/prescornerundergradstats>). But Ellen Kirkman and Dalene Stangl went beyond the anecdotal in their November 2012 *Amstat News* piece, “Elementary-Level Statistics Enrollments Increase” (<http://magazine.amstat.org/Bablog/2012/11/01/elementarystats>).

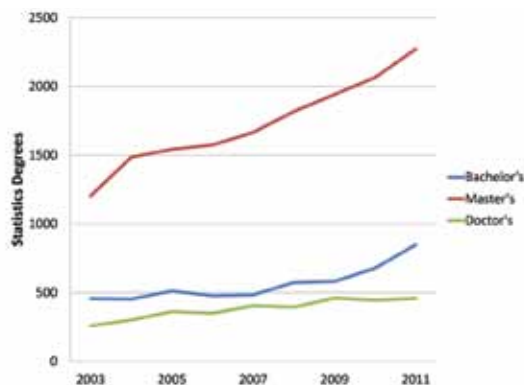


Figure 1. Statistics degrees at the bachelor's, master's, and doctoral levels in the United States. These data include the following categories: statistics, general; mathematical statistics and probability; mathematics and statistics; statistics, other; and biostatistics. Data source: *NCES Digest of Education Statistics*, <http://nces.ed.gov/programs/digest>.

Figure 1 displays data from the National Center for Education Statistics (NCES) *Digest of Education Statistics (DES)* for bachelor's, master's, and doctoral degrees for statistics, biostatistics, and related fields. The bachelor's data seem to confirm the anecdotal evidence for increases in degrees, showing a 40% increase from 2009 to 2011 and a 78% increase from 2003 to 2011. (2003 is the first year the *DES* reported statistics as its own category.)

Admittedly, the number of bachelor's degrees in statistics is still small. For comparison, the number of bachelor's degrees in 2011 for mathematics was almost 14,500; for physics, almost 5,000; for computer and information sciences, more than 11,000. To compare their relative increases, Figure 2 shows bachelor's degrees for statistics, mathematics, and physics normalized to their respective 2003 levels, which are shown in parentheses in the legend. (The normalized charts have only the “Statistics, General” data to allow for apples-to-apples comparison with “Mathematics, General” and “Physics, General” categories.) There does seem to be faster growth lately in statistics—the 25% jump from 2010 to 2011 is especially prominent—but the 2012 data, to be released in September, will be telling.

The comparable draft 2010 data of the quinquennial Conference Board on Mathematical Science (CBMS) Survey, about which Kirkman and Stangl wrote, show a similar rise for undergraduate degrees, with a 5% increase from 2000 to 2005 and then a 62% increase from 2005 to 2010. (Actual data are, respectively, 502, 527, and 856.)

The CBMS survey also tracks undergraduate enrollments, where increasing trends also are observed. For elementary statistics and probability courses, there was a 40% increase from 2005 to 2010 and a 90% increase from 1995 to 2010, as Figure 3 illustrates. Notably, more elementary courses are taught by university mathematics departments and two-year college mathematics programs than by university statistics departments.

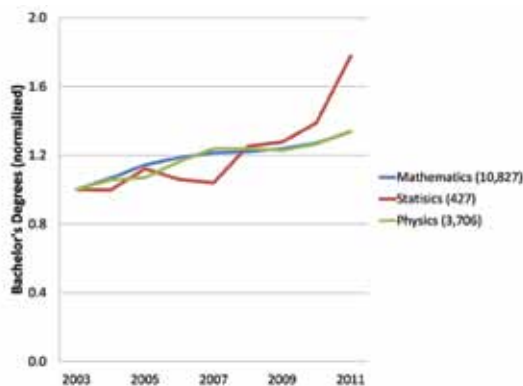


Figure 2. Bachelor's degrees for mathematics, statistics, and physics, normalized to the respective 2003 values, which are shown in parentheses in the legend. Source: *NCES DES*.

Will Rise in Undergrad Statistics Degrees Be Sustained? Can They Be?

Commenting on figures 1 and 2 in the accompanying article, Christine Franklin of the University of Georgia (UGA) expressed hope that the trend toward universal statistics education will continue to rise. Noting that AP Statistics has played an important role in this trend, she added, “Common Core (if implemented successfully) will have a tremendous impact. Just as with AP Statistics, the more high-school students exposed to statistics, the more likely we will see increases in statistics as a potential major in college.”

Rob Gould of the University of California at Los Angeles expanded on the influence that the Common Core State Standards could have. “The fact that statistics is now part of the Common Core, and the fact that almost every state has adopted it, means that for the first time ever, *all* people—not just college educated and not just college educated within particular majors—will have some statistical literacy.”

Regarding the question of whether the growth of undergraduate statistics degrees seen from 2009 to 2011 will be sustained, Gould noted a ceiling effect due to statistics departments not being capable of meeting the demands. “At UCLA, we have established firm caps on core classes because demand has outstripped our resources. This, in turn, might result in a flattening of students wanting to change majors to stats, if they fear it might be hard to complete their degree. As a result, we need to work to try to create more opportunities at the undergraduate level for the increased number of students clamoring for more knowledge of statistics.”

Franklin reported a similar experience at UGA, where they are unable to add more sections of their most in-demand courses due to the lack of additional faculty. Gould predicts any flattening effect on statistics degree growth would not manifest itself until 2014.

Nicholas Horton of Smith College reinforced the need for creative solutions to meet the increased demand for intermediate and advanced undergraduate statistics courses. “Our mathematics and statistics department is seeing an increased number of students pursuing the statistics track through our major, as well as many more students from other disciplines completing upper-level courses.” Smith recently added a data science course that develops the capacity for students to compute with data.

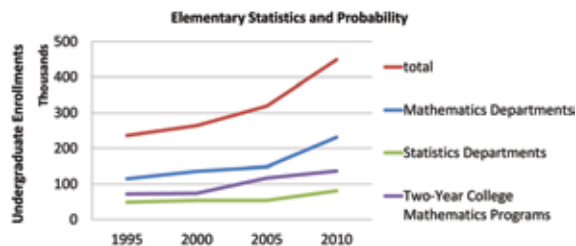


Figure 3. Undergraduate enrollments in elementary statistics and probability from the quinquennial CBMS survey. Source: 2010 CBMS survey draft table 1: www.ams.org/profession/data/cbms-survey/Chap1WebTables.130321.pdf

For upper-level statistics and probability courses, the numbers are flatter in total, but up 70% from 1995 to 2010 for courses taught in statistics departments, as shown in Figure 4.

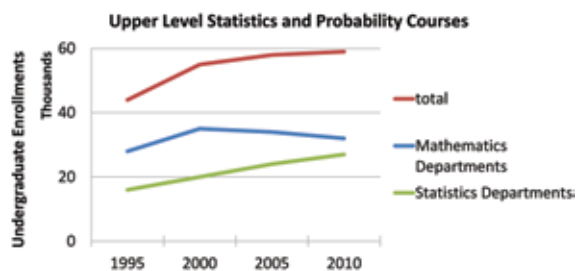


Figure 4. Undergraduate enrollments in upper-level statistics and probability. Source: 2010 CBMS survey draft table 1: www.ams.org/profession/data/cbms-survey/Chap1WebTables.130321.pdf

Figure 1 shows steady increases in statistics master’s degrees from 2003 to 2011. In comparison to mathematics and physics degrees, the absolute numbers are of the same order of magnitude, but the normalized values in Figure 5 show the rise in statistics master’s degrees being larger. Including biostatistics with the statistics master’s degrees only changes the normalized comparison with math and physics slightly.

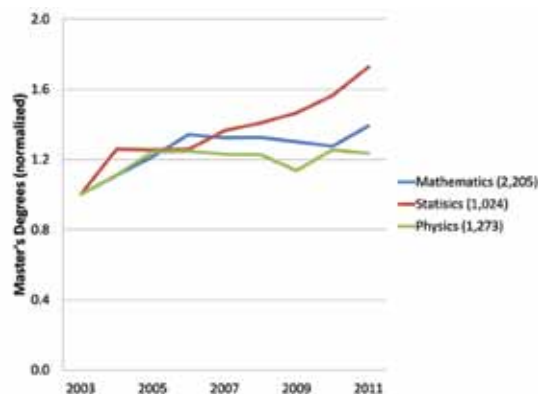


Figure 5. Master’s degrees for mathematics, statistics, and physics, normalized to their respective 2003 values, which are shown in parentheses in the legend. Source: NCES DES.

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For doctorates, the number of statistics degrees is about a third of that in mathematics and a fifth of that in physics, but the growth rates since 2003 are similar for all, as Figure 6 shows. If one includes biostatistics in the doctorate data, which rose from 54 in 2003 to 125 in 2011, then the rise is a little greater than that of mathematics and physics.

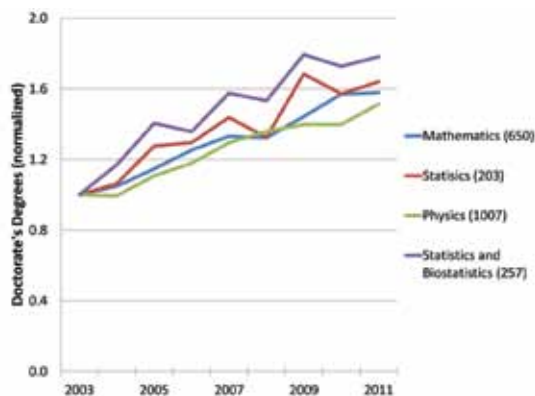


Figure 6. Doctoral degrees for mathematics, statistics, physics, and statistics and biostatistics normalized to their respective 2003 values, which are shown in parentheses in the legend. Source: NCES DES.

At the high-school level, Bialik's column showed a graph documenting the strong rise in the number of students taking the AP Statistics exam since 1997. Rodriguez also wrote a popular *Amstat News* column last September, "More Than 1 Million and Counting: The Growth of Advanced Placement Statistics," in which he captured the excitement of the reading for the AP Statistics exam and introduced some extraordinary educators. The AP Statistics exam data are shown in Figure 7, and we look forward to learning the 2013 number this summer.

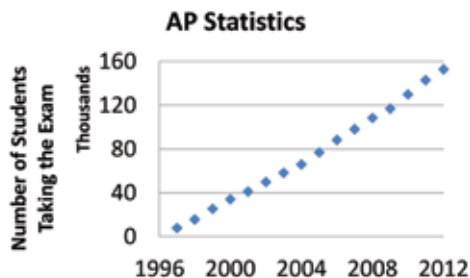


Figure 7. The number of high-school students taking the AP Statistics exam has risen steadily since 1997. Source: The College Board; www.collegeboard.com/student/testing/ap/sub_stats.html?stats

For the purpose of this article, I've tried to keep my comments on the data to a minimum, but I look forward to a discussion of these trends and the potential implications for the statistics community. ■

FUNDING OPPORTUNITIES

Army Funding Opportunities in Probability and Statistics

Wendy Martinez and Alyson Wilson, Section on Statistics in Defense and National Security



Image courtesy of www.army.mil

There are many Army funding opportunities available from the Army Research Office (ARO) for statisticians and researchers from academia and industry. We briefly describe some of these opportunities in this article; however, we want to stress that these are just a few of the many available from the Army and other Department of Defense research agencies, such as the Office of Naval Research (ONR) and the Air Force Office of Scientific Research (AFOSR). Interested researchers should use the websites discussed at the end of the article to investigate other sources of DoD funding.

Government research needs range from basic to more advanced applied development; we focus mostly on basic research programs in this article. We categorize the opportunities given here into two main types: single-investigator awards submitted in

response to core research needs and special programs.

Ideas for single-investigator efforts usually originate from a principal investigator (PI), and the awards provide funds for the PI and possibly graduate student support. The awards are typically in the range of \$100,000 to \$120,000 per year for three years.

The ARO (ONR and AFOSR, as well) publishes an annual long-range broad agency announcement (BAA) that contains information about an agency's core research needs. A BAA describes a competitive official solicitation process to obtain proposals that address the needs outlined in the announcement, and PIs should read these carefully to ensure they meet all the requirements and submit the necessary information. Usually, the PI develops the research idea and submits the proposal in accordance with the BAA. However, Mou-Hsiung (Harry) Chang (mouhsiung.chang.civ@mail.mil) of ARO recommends PIs contact the program manager (PM) to ensure their research idea is in line with the needs of the ARO. In many cases, submission of a white paper is also strongly encouraged before sending in a proposal.

The core BAA announcement for basic and applied research needs by the ARO can be found at www.arl.army.mil/www/default.cfm?page=29, solicitation number W911NF-12-R-0012. This BAA includes a call for research in probability and statistics. In general, the ARO Probability and Statistics

Program provides support for basic research in stochastic analysis and control, as well as for statistical analysis and methods in response to the Army's need for real-time decisionmaking under uncertainty and for the test and evaluation of systems under development. Chang highlights the following thrust areas for the ARO that might be of interest to members of the American Statistical Association:

Stochastic Analysis and Control: Modeling, analysis, and control of stochastic dynamical systems generate a need for research in stochastic processes, random fields, and/or stochastic differential equations in finite or infinite dimensions. This research thrust is concerned with stochastic partial differential equations, measure-valued stochastic processes, weakly interacting stochastic systems, and topics in applied probability.

Statistical Analysis and Methods: This thrust includes statistical testing and validation of network models; reliability and survivability; data, text, and image mining for network-centric systems; statistical theory and techniques for real-time analysis of data streams, Bayesian and nonparametric statistics, statistical analysis of very large and very small data sets, and geometric methods for statistical inference.

There are two other special types of single-investigator awards we want to highlight. These awards are important for statisticians, scientists, and

engineers who are just starting their academic careers. The ARO, AFOSR, and ONR each have a young investigator program (YIP), and they each have different requirements and award levels. The ARO Young Investigator Program is described in the ARO core BAA given earlier; please refer to that document for proposal deadlines, schedules, award levels, eligibility requirements, and other process details. The objective of the ARO YIP is to expose outstanding young faculty members to Army research and encourage their teaching and research careers.

We highlight two of the special programs that might be of interest to the ASA membership. The first is the Multidisciplinary University Initiative (MURI). MURI awards are large projects that involve teams of researchers who investigate high-priority problems of interest to the Army and other DoD research agencies. These problems or topics typically intersect more than one discipline. The goal is to stimulate innovations and accelerate the research progress by providing a substantial amount of funding that goes beyond the single-investigator level. The award amounts can vary, but they are typically for \$1 million per year for three to five years. The BAA announcing the call for MURI proposals comes out once a year.

The second special program is called the Defense University Research Instrumentation Program (DURIP). This program provides funds for university research infrastructure and/or instrumentation needed to carry out innovative research in support of the Army (or DoD). Some examples might be specialized computer labs to study culture and behavior, sensor

networks and testbeds, or large-scale computing platforms for information fusion. Like the MURI and YIP, there is a call for proposals once a year.

The following is a partial list of websites and resources for information about more funding opportunities from the Army and other DoD agencies.

- Go to the websites for the individual DoD funding agencies and to the pages that have information about BAAs and funding opportunities. Besides ARO, there is ONR (www.onr.navy.mil) and AFOSR (www.wpafb.af.mil/afri/afosr). They should have listings of current and past BAAs. Previous BAAs and information about recipients can help guide researchers.

- The National Security Agency (NSA) has research opportunities that can be found at www.nsa.gov/research/math_research/index.shtml. They support unclassified research in probability and statistics, as well as other areas in mathematics.

- Announcements for DoD grants can be found at www.grants.gov. Click on Find Grant Opportunities and Browse by Agency.

- FedBizOps (www.fbo.gov) is the main source of federal procurement opportunities.

- Opportunities for small businesses are available in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) at www.acq.osd.mil/osbp/sbir. Offerors submit proposals in response to topics that are published in the solicitations. Research institutions and universities can partner with a small business in the SBIR program. It is a requirement of the STTR program that the proposal

include a research institution as part of the team. As always, see the solicitation or BAA for complete and accurate instructions and requirements for these (or any) programs, as they can change.

The information contained in this article is meant to give general guidance to statisticians and researchers and does not represent an official document or policy of any government agency. PIs should always refer to the relevant BAAs and solicitations for official guidance and information when submitting a proposal. ■

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Getting Closer

Ron Wasserstein, ASA Executive Director, and Christy Chuang-Stein, Statistical Research and Consulting Center, Pfizer Inc.



Members of the ASA's 175th Anniversary Steering Committee are excited about the progress of plans to make the 175th anniversary an important landmark in the ASA's history and eager to share this progress with the ASA membership. That is the purpose of this month's column. (See <http://magazine.amstat.org/blog/category/columnnews/175>)

As you have previously read here, the theme for the 175th anniversary is "Celebrate Our Past, Energize Our Future." The steering committee has been meeting twice monthly by conference call for many months to develop strategies and plans around both parts of the theme. While sharing our strategies and plans with you, we also want to let you know that many of the plans are already in motion.

The steering committee focused first on forward-looking projects to energize our future. Working with the ASA Board of Directors, it established three areas of focus: education, membership growth, and impact of statistics. Each was given its own "code name": StatSharp, StatGrowth, and StatImpact, respectively.

Plans for StatSharp are well under way. Members and staff plan to develop a virtual summer camp for secondary-school teachers to help them better teach statistics to meet the requirements of the Common Core State Standards. In a related effort, ASA members Chris Franklin and Tim Jacobbe are leading a group that will write a document called "The Statistical Education of Teachers" (SET) in 2014. The SET corresponds to a document called "The Mathematical

Education of Teachers," published by the Conference Board for the Mathematical Sciences. These activities will be a major contribution toward improving secondary-level statistical instruction.

The StatGrowth initiative is based on the idea that the ASA's membership should be able to rise to the 20,000 level and beyond. The steering committee is collaborating with the Committee on Member Retention and Recruitment to find mission-appropriate ways to increase membership. It also is working with the Council of Chapters Governing Board to support chapters in their local outreach endeavors to quantitative professionals who have yet to engage with chapters or the ASA.

StatImpact expresses the idea that the impact of statistics upon people and their environment is highly positive, but also unrecognized by many in our societies. The steering committee would like to use the year 2014 to highlight that impact. The JSM 2014 theme will focus on the impact of statistics. The steering committee is working with the editor of the journal *Statistics in Biopharmaceutical Research* (see www.tandfonline.com/toc/usbr20/current) to highlight statistics contributions to major advancements in biopharmaceutical research in a special section of the journal in 2014. A major public relations campaign is under consideration, details of which will be reported in this column as they develop.

Needless to say, the steering committee has big plans to celebrate our past during 2014. One hundred seventy-five years is a major milestone, one that has been reached by only one other

professional society in the United States (the American Philosophical Society). The steering committee plans to start the celebrations with special activities and giveaways at JSM 2013 in Montréal. It will host a breakfast mixer on August 7 with targeted invitees from section, committee, and chapter leadership to help broaden its plans for 2014. Also, the Committee on Archives and Historical Materials is hard at work making plans for reminding us of important parts of our past.

During JSM 2014, a major celebratory party is planned. Activities include a talent show and slide show of the association and its members. The steering committee will announce later how interested (and willing) members can participate in the talent show at the party over, yes, food and drink. It also plans to reach out to those with known talents. So, please keep up the much-coveted talents. Your association will need you!

Recognizing that many people are not able to attend JSM, the steering committee is working to extend the celebration well beyond the meetings. Chapters and sections will be pivotal in these plans, and a website is under development.

The steering committee hopes you are enjoying and engaging in the International Year of Statistics this year and getting warmed up to celebrate 175 years of promoting the practice and profession of statistics. The ASA is our association, and statistics is our profession. The steering committee is determined to find ways to celebrate both with all of you! ■

MASTER'S NOTEBOOK

Finding the Balance

Amy Gehrke, Mathematica Policy Research

As a teenager, I thought I had found my passion. Watching one too many episodes of “The West Wing,” I was convinced I was meant for the fast-paced, wheeling and dealing world of Washington, DC. I thought I was ready to make a difference and change the world. It was no surprise, then, that I went to college in our nation’s capital at one of the most politically active schools, eager to begin my studies as a political science major. However, one thing kept popping up in all my classes. My classmates always had some fact, some number, some statistic to prove that their opinion was the correct one, but where were all of these numbers coming from?

It wasn’t until I took a class in public opinion and polling that I began to realize not just where all these numbers were coming from, but also how complex the world of surveys could be. Now armed with the knowledge that surveys weren’t as simple as asking 100 people on the street corner a question, I became increasingly frustrated that my classmates didn’t seem to have the same appreciation for the process of gathering all those numbers they loved to recite. That’s when I learned to love statistics.

By the time my four years were coming to an end, my major in political science had become a secondary interest to my minor in statistics. I no longer dreamed of working on the Hill, but instead wanted to be the one researching those facts and numbers that policymakers and pundits alike rely on so heavily. I was fortunate enough to find a job straight out of college at Mathematica Policy Research, a social science research organization that focuses on issues such as health and education.

At Mathematica, I found a community that emphasized mentorship. Although I was a member of the survey department, it was no secret I was interested in statistics. While gaining experience in survey development, I also was able to see how statisticians brought their expertise to the table. The statisticians were all welcoming, bringing me onto their projects and encouraging me to take short courses on sampling to help guide my transition from the survey department to statistics. Some even had similar backgrounds as me—those who didn’t find statistics until after undergrad and made the career switch in graduate school.

After a year at Mathematica, I decided the best way to truly become a statistician was to go back to school. Being a political science major in college made the process a bit more daunting, what with all the extra prerequisites I would need. But with an ample amount of time on my hands and plenty of patience, I set off to change my career path. Thinking I would be right at home with my fellow statistics graduate students, I quickly learned that my career choices differed from that of my classmates. Professors and students alike were more focused on the role statistics could play in the world of clinical trials and other scientific research. Aside from one course in sampling, there was not much mention of how statistics could be used in the social sciences. It seemed I was the lone student interested in policy research.

One of the most important things I have learned in both my studies in political science and statistics, as well as my experience working at Mathematica, is that very rarely is there a job out there



that is so singularly focused on one course of study. It is possible to have two seemingly opposite interests and marry them into one career. Although political science students are often funneled into lobbying firms, think tanks, or staffers on the Hill, and statisticians are funneled into biostatistics, it is possible to find something relating the two. With enough drive and good advice, I was able to find a career that perfectly balanced my desire for public service and my need to have the most objective facts.

I rejoined Mathematica after graduate school as a full-fledged member of the statistics department. As a statistical analyst, I have the opportunity to work on projects that are relevant to our national discourse, such as Medicaid research and violence and bullying in our schools.

Am I changing the world? My 18-year-old self thought the best way to make a difference was to be right there at the front lines with members of Congress and senators, but as a statistical analyst for a policy research organization, I help provide the objective research and those elusive numbers that help policymakers make well-informed decisions. ■

STATtr@k

Attending Your First JSM—Working Hard and Playing Even Harder

Stephanie Shipp with Jana Asher, Laura Freeman, Shane Reese, Rob Santos, Gina Walejko, and Alyson Wilson

The Joint Statistical Meetings are held every August, and, for ASA members, it is a time to connect with colleagues, meet new people, present a paper or poster, and have some fun. The common theme of those who have attended JSM once or dozens of times is that the ASA is a large community that works hard and plays even harder. As a community, JSM brings its members together in ways that allows opportunities for learning from and enjoying each other's company.

My introduction to JSM was in 1986 in Chicago, where Eva Jacobs introduced me to the Caucus for Women in Statistics. As a government economist who worked on federal surveys, JSM was a wonderful opportunity to meet others in government, academia, and industry and to hear their stories and research interests.

JSM is set up for you to meet and talk to interesting people, to present your research in a supportive environment, and, importantly, to have fun. The sessions are designed so you only have to attend the parts of a session you are interested in hearing. There are many events that allow you to participate actively. The ASA's 26 sections hold business meetings in late afternoon or early evening, and part of their meetings is social. JSM also hosts social events, including plenary talks, the Sunday night Opening Mixer, and the Tuesday evening Dance Party and Lounge after the president's speech.

Other groups provide opportunities for meeting statisticians, as well. For example, the Caucus for Women in Statistics holds an informal reception on Sunday evening, followed by groups going out to dinner, a formal reception on Monday evening, a business meeting and social on Tuesday evening, and breakfast roundtables throughout the week.

Below are memories of a handful of JSM attendees, some who have attended once and some for more than 30 years. First, their overall memories are presented, followed by advice for attending your first JSM, giving your first talk, meeting famous statisticians, and why going back to JSM each year is rewarding.

Memories of Attending Your First JSM

Laura Freeman of the Institute for Defense Analyses, attended her first JSM in Denver, Colorado, in 2008. "It was an eye-opening experience. The first thing you will notice attending JSM is just how big the conference is, thousands of statisticians

spanning a diverse range of research topics and applications. The diversity of backgrounds is one of the most worthwhile reasons for attending JSM. If you are a student looking for a research area, JSM can give you ideas of what current topics of research are. If you are starting to look for a job, there are a plethora of companies to interview with and presentations on all types of applied statistics. Attending these events allowed me to meet people with similar research interests, and I am still in close contact with many of statisticians I met during that first JSM in 2008. Additionally, these colleagues are now some of my strongest allies now in my career."

Gina Walejko of the U.S. Census Bureau attended her first JSM in Miami Beach in 2011. "I enjoyed the diversity of speakers and realized I had found a new community of government and survey statisticians."

Jana Asher, a statistical consultant, attended her first JSM in 1999 in Baltimore. "I remember being awed by how large the space was and how much there was to do. Although I enjoyed the sessions, what made it most memorable was participating in the evening activities."

Alyson Wilson of IDA Science and Technology Policy Institute attended her first JSM in 1991 in Atlanta. "I remember how exhausting the meeting was—I was convinced that I had to attend talks during every single session! I also have a memory (perhaps apocryphal) of my husband attending the "Wives Tea," which was intended for the nonstatistician spouses attending the meetings.

Rob Santos of the Urban Institute attended his first JSM in 1979 in Washington, DC, when he was a graduate student at the University of Michigan. "I was basically the classic 'hippie grad student' (e.g., long-haired young male wearing an earring before they became popular), attending my first professional meetings ever, and it was quite the experience."

Meeting Famous Statisticians

Shane Reese of Brigham Young University attended his first JSM in 1995 in Orlando, Florida. He went with two of his colleagues. "We decided that one of our goals for our first JSM was to meet as many 'famous' statisticians as possible (which, as master's students, mostly consisted of people who had written the textbooks in our courses). As we went to the Opening Mixer at an amazing outdoor venue, I

was pleased to meet George Box, who, to this day, is one of the most gracious guys I've ever met. On Tuesday evening, a few of us gathered at the Disney Jungle Club (as close to a bar/club as you get at the Disney resorts) and I had the privilege of meeting another textbook hero, Trevor Hastie. That evening, we headed to the JSM student mixer, where I won a raffle for a free book and chose a copy of Tufte's *The Visual Display of Quantitative Data*, which I still refer to on a regular basis. After the mixer, we couldn't help but experience the spectacle that is the JSM Dance Party! While we anticipated only laughs, we found people dancing and having a great time and another textbook maestro in Dick De Veaux, as he showed his moves on the dance floor. As I waited for a shuttle in front of the hotel, I had the good fortune of meeting Erich Lehmann, another legend in my small world of statistics.

Rob Santos: "I shared a room with a young faculty member from UCLA (Leo Estrada), who went out of his way to mentor me into the JSM. I had met him through a research project we worked on together at the UM Institute for Social Research. He showed me how to navigate the program, introduced me to famous 'established' statisticians in government, academia, and industry. He also discussed and showed me the importance of just walking up to folks and starting a conversation; we were fellow statisticians and 'all in this together.' And he made sure I attended the evening section meetings and some (open) committee meetings and mixers."

Advice About Attending the Meeting

Jana Asher: "My advice to someone attending for the first time is to pace yourself during the day (you don't have to go to every session) and participate in the activities at night—that is when you really get to meet people and have fun!"

Shane Reese: "While the sessions were all well above my head, I felt like I learned something from every talk. As Sunday moved into Monday and Tuesday, I actually started understanding more of the talks (or at least I convinced myself that I did)!"

Giving Your First Talk (Not Necessarily at Your First JSM)

Alyson Wilson: "I gave my first JSM talk in Boston (1992). This was one of my very first professional talks, and I remember that the room seemed huge. I was hoping that my transparencies would be visible and that the microphone would work."

Gina Walejko: "My talk went well and was attended by the then director of the Census Bureau and my PhD advisor, which felt good."

We decided that one of our goals for our first JSM was to meet as many 'famous' statisticians as possible . . .

Having Fun

Jana Asher: "I met Arlene Ash at a Caucus for Women in Statistics event and ended up going out to dinner with her and several other young female statisticians. Arlene sprang for the wine (we were all of age). By the end of that JSM, I was the new membership chair for the Caucus for Women in Statistics and had become involved with the Government Statistics Section!"

Gina Walejko: "I crashed the University of Wisconsin-Madison (my undergraduate alma mater) happy hour with a co-worker who also attended the conference, and we had a great time drinking beer, eating cheese, and talking to people about their research."

Attending JSM Gets Better Each Year

Shane Reese: "As the conference came to a close, I realized I'd had a great time. It wasn't nearly as dull and boring as I'd figured it would be in my mind. . . . As I boarded the flight, I couldn't help but think of what an awesome time I'd had. I'd learned a ton and had met some of the real pioneers in the field. Most of my JSM experiences since then have been similarly awesome."

Laura Freeman: "Since attending my first JSM in 2008, I have been back every year. Each year, I find a new and worthwhile activity, presentation, or event to attend. At your first JSM, be sure to take advantage of all the conference has to offer and you will also be a repeat attendee."

Rob Santos: "Interestingly, my cultural choices (i.e., flower child attire and attitude) didn't always mesh with the relatively conservative elder statistician-statesmen. But that was okay. All were cordial, and many, if not all, ended up being valued colleagues as years went by. I learned that the common language and passion for statistics overcame cultural boundaries. Over the years, I have followed in my mentor's footsteps by orienting first-time JSM attendees and younger statisticians, even to the point of demonstrating how easy it is to just walk up to a fellow statistician at JSM and 'just start talking.' JSM provides a great community for learning and for camaraderie!" ■

REGISTRATION FORM

2013 ASA Biopharmaceutical Section

FDA-Industry Statistics Workshop

September 16-18, 2013 • Marriott Wardman Park—Washington, DC



[www.amstat.org/
meetings/fdaworkshop](http://www.amstat.org/meetings/fdaworkshop)

INSTRUCTIONS

1. Print or type all information and retain a copy for your records.
2. Use a separate form for each registrant.
3. Mail form with payment to FDA-Industry Statistics Workshop Registration, 732 N. Washington Street Alexandria, VA 22314. Fax form (credit card only) to (703) 684-2037.
4. Registration form must be received by August 26, 2013, to be processed at the reduced rate. Purchase orders will not be accepted. ASA Federal ID #53-0204661.

Forms Received Without Payment Will Not Be Processed.

ATTENDEE INFORMATION

ASA ID # (if known) _____

Name _____

Preferred First Name for Badge _____

Organization _____

Address _____

City _____ State/Province _____ ZIP/Postal Code _____

Country (non-U.S.) _____

Phone _____

Email _____

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

Emergency Contact's Name _____

Telephone Number _____

- Please update my ASA customer contact information with this contact information.
- Please exclude my name from the conference attendee roster that will appear on the conference website.



This meeting is ADA accessible.



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

CANCELLATION POLICY

Cancellations received by August 26, 2013, will be refunded, less a \$25 processing fee and less a \$10 processing fee for each short course. Cancellations received from August 27 to September 9, 2013, will be refunded, less a \$50 processing fee and less a \$15 processing fee for each short course. Requests for refunds received after September 9 will not be honored. All cancellations must be made in writing to ASAInfo@amstat.org, via fax to (703) 684-2037, or mailed to FDA-Industry Statistics Workshop Registration, 732 N. Washington Street, Alexandria, VA 22314.

MEAL PREFERENCE Lunch on Tuesday, September 17, is included with your workshop registration. Please indicate the roundtable number (see back of form) for your 1st, 2nd, and 3rd choices. **(Required)**

1st _____ 2nd _____ 3rd _____ Lunch only Not attending lunch

Select one of the following menu options:

- Regular Vegetarian

REGISTRATION FEES Workshop Fee (required)

	By August 26	August 27- September 9	
<input type="checkbox"/> Registrant	\$285	\$310	\$ _____
<input type="checkbox"/> Academic (nonstudent)	\$230	\$255	\$ _____
<input type="checkbox"/> Biopharm Section Member	\$240	\$265	\$ _____
<input type="checkbox"/> Government Employee	\$140	\$165	\$ _____
<input type="checkbox"/> Student	\$130	\$155	\$ _____

Short Courses—Tuesday, September 17

Add-ons to workshop fee: \$105 each through August 26; \$110 each August 27-September 9

8:30 a.m.-12:00 p.m.

- SC1: Overview, Hurdles, and Future Work in Adaptive Design—*Chris Coffey* \$ _____
- SC2: Survival Analysis: Overview of Parametric, Nonparametric, and Semiparametric Approaches and New Developments Using SAS Software—*Joseph Gardiner* \$ _____
- SC3: Unsettled Issues in Clinical Trial Data Monitoring—*Susan Ellenberg and Steve Snapinn* \$ _____

1:30 p.m.-5:00 p.m.

- SC4: Enrichment Strategies in Adaptive Clinical Trials: Theory and Implementation—*Anastasia Ivanova and Vlad Dragalin* \$ _____
- SC5: A Practical Guide to Prevention and Treatment of Missing Data—*Craig Mallinckrodt and Russ Wolfinger* \$ _____
- SC6: Issues and Methods for Multi-Regional Clinical Trials from an Industry and Regulatory Perspective—*James Hung, Sue Jane Wang, and Joshua Chen* \$ _____

TOTAL FEES: \$ _____

PAYMENT

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

Credit Card American Express Discover MasterCard VISA

Card Number _____

Expiration Date _____

Security Code _____

Name of Cardholder _____

Authorizing Signature _____

Roundtable Luncheon Topics

Tuesday, September 17

Adaptive Design

TL1: Logistics and Implementation of Adaptive Trial Designs, Eva Miller, Quality Data Services

Bayesian

- TL2: Borrowing from Informative Priors, Pablo Bonangelino, FDA/CDRH
- TL3: Utility of Bayesian Methods in the Analysis of Safety Data in the Pre-Market Setting, Melvin Munsaka, Takeda Global Research and Development, Inc.; Caiyan Li, Takeda

Benefit/Risk

- TL4: Long-Term Safety Follow Up – Challenges, Vipin Arora, AbbVie, Inc.
- TL5: Assessment of Benefit Risk in Pivotal Studies, Suchitrita Rathmann, AbbVie, Inc.

Biomarkers/Biosimilars

- TL6: Implementation of Biomarker Development and Then Validation at the Interception of Research and Clinical Development, Maha Karnoub, Celgene
- TL7: Criteria for Biosimilar Approval, Peter Lachenbruch, Oregon State University (retired); Eric Chi, Amgen
- TL8: Biomarker, Lixia Pei, Janssen Research & Development; Grace Liu, Johnson & Johnson/Janssen Research & Development

Data Monitoring Committee

- TL9: Ideas on Establishing an Independent Supervisory Body for Data Monitoring Committee Processes, Yeh-Fong Chen, FDA; Paul Gallo, Novartis Pharmaceuticals
- TL10: Operational Models for Data Monitoring Committees, William Coar, Axio Reserach; Lynn Navale, Amgen

Data Quality

- TL11: How Can Statisticians Show Leadership in Improving Data Quality?, Michael Hale, Amgen

Diagnostic/Devices

- TL12: Demographic Criteria for Diagnostic and Device Clinical Trials, Hope Knuckles, Abbott; Richard Kotz, FDA
- TL13: Practical Issues in the Application of Propensity Score Methodology for Designing Pivotal, Non-Randomized Studies of Medical Device, Jianxiong Chu, FDA
- TL14: Data Poolability, Chul Ahn, FDA/CDRH
- TL15: Study Design and Imprecision Estimation in Precision Study for Diagnostic Devices, Qin Li, FDA

Group Sequential Design

- TL16: Bias Adjustment Following Group Sequential Design, Qi Zhang, Eli Lilly and Company

Interim Analysis

- TL17: Analysis of Overrun Data in Group Sequential Trials, Paul DeLuca, Merck and Co., Inc.
- TL18: Is Interim Futility Analysis a Free Lunch?, Julie Cong, Boehringer Ingelheim Pharmaceuticals Inc.

Meta-Analysis

- TL19: Regulatory Issues in Meta-Analysis of Safety Data, Aloka Chakravarty, FDA; Brenda Crowe, Eli Lilly and Company

Methodology

- TL20: Planning for Clinical Trials with Recurrent Event Data: When the Poisson Modeling Assumption May Not Hold, Jerry Weaver, Novartis Pharmaceuticals Corporation; Judy Li, FDA
- TL21: Predictive Modeling in Observational Studies, Rui Li, Quintiles Outcome

Methodology/Design

- TL22: Reallocation of Type I Error to Doses Not Eliminated Due to Prospectively Defined Objective Safety Criteria, Anthony Rodgers, Merck & Co., Inc.
- TL23: Cohort Sampling Design in Risk Assessment Markers, Rong Tang, FDA; Yuying Jin, FDA
- TL24: Evaluating the Methodological Quality of Randomized Clinical Trials, Vance Berger, NIH
- TL25: Pros and Cons of Discriminate Analysis in Animal Health Dose Titration Studies, Theresa Real, Novartis Animal Health
- TL26: Recognizing and Avoiding Common Bias Problems in Clinical Trials, Jonathan Siegel, Bayer HealthCare Pharmaceuticals Inc.
- TL27: Randomization Metrics: How Do You Measure the Goodness of a Randomization Scheme?, Dennis Sweitzer, Medidata Solution
- TL28: Statistical Significance vs. Clinical Significance, Jack Zhou, FDA; Melissa Simones, Boston Scientific
- TL29: Prediction of Event Times in Randomized Clinical Trials, Misha Salganik, Cytel Inc.

Methodology/Missing Data

- TL30: Impact of Missing Data on the Approval of Potentially Efficacious Therapies, Xiaohong Huang, Vertex Pharmaceuticals; Abdul Sankoh, Vertex Pharmaceuticals
- TL31: Missing Data Handling, Jin Xu, Merck; David Li, Pfizer

Methodology/Sample Sizes

- TL32: A Comprehensive Review of Sample Size Determinations for the Wilcoxon-Mann-Whitney Test, Gary Kamer, FDA
- TL33: Sample Size Estimation for Multi-Regional Clinical Trials, Kimberly Cooper, Janssen Research & Development

Multiplicity

- TL34: Assessment of Multiple Endpoints in Phase 3 Preventive Vaccine Clinical Trials, Karen Goldenthal, Bethesda Biologics Consulting, LLC

Non-Inferiority

- TL35: Non-Inferiority Studies for Both Human and Veterinary Medicine, Anna Nevius, FDA/CVM

Observational Studies

- TL36: Analyzing Very Large Retrospective Claims Databases, C. V. Damaraju, Janssen Research & Development

Pharmacokinetic Studies

- TL37: Pharmacokinetic Dose Proportionality Studies, Jaya Natarajan, Janssen Research & Development
- TL38: Vaccine Antigen Overages, Louis Luempert, Novartis Animal Health

Safety

- TL39: Safety Evaluation During Clinical Drug Development – Size and Extent of Population Exposure, Elena Polverejan, Janssen Research & Development, Johnson & Johnson; Bradley McEvoy, CDER, FDA
- TL40: Challenges in Post-Marketing Safety Assessment by Using Spontaneous Reports, Rongmei Zhang, FDA; Brent Burger, Cytel Inc.

Software

- TL41: Open Source Software and the FDA, Jae Brodsky, FDA
- TL42: Effective Use of Table, Figure, and Listing in the Study Report of a Clinical Trial, Wei Wang, Eli Lilly and Company

Statistical Analysis Plan

- TL43: Statistical Analysis Plan (SAP) or Robust Statistical Methods – What Does the FDA Need for Protocol Evaluation, Janet McDougall, McDougall Scientific Ltd.
- TL44: Development of Statistical Analysis Plans (SAPs) in Observational Studies, Ari Marcus, Quintiles Outcome

Therapeutic Area Specific Topic

- TL45: Recent Developments in the Clinical Trials for Alzheimer's Disease, Jingyu Luan, FDA; Chengjie Xiong, Washington University
- TL46: Sensitivity Analyses of PFS in Oncology Trials, Biao Xing, Onyx Pharmaceuticals

New Initiatives and Highlights of JSM 2013

Bhramar Mukherjee, JSM 2013 Program Chair



Mukherjee



MontréalCanada
JSM2013
 August 3-8

The Joint Statistical Meetings provide a unique opportunity for members of our profession to come together each year and share their scientific ideas. This year's JSM (August 3–8, Montréal) is special, with the theme being “Celebrating the International Year of Statistics.” Members of the JSM program committee have put together an outstanding program consisting of 183 invited, 196 topic-contributed, and 230 contributed sessions. This year's program highlights the power and impact of statistics on all aspects of science and society on a global scale.

Celebrated statistician Nate Silver, the founder of the award-winning FiveThirtyEight.com political website, will be the President's Invited Address speaker on August 5. The COPSS Fisher Lecture will be given by Peter Bickel on August 7.

You will be sure to find many fun and interesting activities at JSM, no matter what your interests are or whether your home is in industry, government, or academia. I encourage and invite the worldwide statistics community to participate fully in the meeting, not only by attending talks, but also by visiting the poster presentations and joining Continuing Education courses, roundtable luncheons, and mixers. As the JSM 2013 program chair, I would like to draw your attention to a few new initiatives this year.

SPEED Sessions

A pilot study of contributed sessions with a new and different format will be conducted for JSM 2013. A recurrent concern for many JSM attendees has been the seemingly unbounded size of the meeting. Having to choose among 46 parallel sessions has been a source of frustration for many JSM participants. In Montréal, we will test SPEED sessions, one possible approach used at many conferences to reduce the number of concurrent sessions.

Five large ASA sections (Biometrics, Statistics in Epidemiology, Statistical Learning and Data Mining, Biopharmaceutical Statistics, and Survey Methodology) agreed to collaborate on this pilot venture. A SPEED session will consist of 20 oral presentations of approximately five minutes each, with a 10-minute break after the first set of 10 talks. These short oral presentations will be followed by an electronic poster session later on the same day.

We will conduct a detailed attendee and presenter satisfaction survey for these sessions, so if you have a chance to visit the four pilot SPEED oral and

poster presentation sessions, please check out this new format and let us know what you think.

August 5, 8:30 a.m. - 10:20 a.m.

Analytic Challenges in Epidemiological Studies and Public Health

Sponsors: Biometrics Section, Section on Statistics in Epidemiology

August 6, 8:30 a.m. - 10:20 a.m.

Methods and Applications in Biomedical Data and Clinical Trials

Sponsors: Biometrics Section, Biopharmaceutical Section

August 6, 10:30 a.m. - 12:20 p.m.

Methods and Applications in High-Dimensional Data

Sponsors: Section on Statistical Learning and Data Mining, Biometrics Section

August 7, 8:30 a.m. - 10:20 a.m.

Statistical Challenges with Measurement, Complex Design, and Missing Data

Sponsors: Survey Research Methods Section, Biometrics Section, Section on Statistics in Epidemiology

Introductory Overview Lectures (IOLs)

Over the years, the IOLs have not only become an integral part of JSM, but also one of the most popular and sought after features. This year, we have increased the number of IOLs relative to past years. Typical IOLs with two presentations allocate 45–50 minutes of lecture followed by 5–10 minutes of Q&A for each, whereas a single-speaker IOL is a 90-minute lecture followed by discussion and Q&A. We have the following ensemble this year:

August 4, 4:00 p.m.

Celebrating the History of Statistics

Presenters: Stephen Stigler, Alan Agresti, and Xiao-Li Meng

August 5, 8:30 a.m.

Twenty Years of Gibbs Sampling/MCMC

Presenters: Alan Gelfand and Jeff Rosenthal

August 6, 2:00 p.m.

Big Data

Presenters: Bin Yu and Bill Cleveland

August 7, 2:00 p.m.

Mediation and Confounding

Presenter: Tyler VanderWeele
Discussant: Jay Kaufman

August 7, 8:30 a.m.

Next-Generation Bioinformatics and Beyond

Presenters: Rebecca Doerge and Rafa Irizarry

August 6, 8:30 a.m.

Personalized Medicine: Tailoring Treatment to the Right Patient

Presenters: Butch Tsiatis and Stephen Ruberg

August 6, 10:30 a.m.

Inference from Complex Sample Surveys: Past Controversies, Current Orthodoxies, Future Paradigms

Presenter: Rod Little
Discussant: Ray Chambers

ASA Awards, Opening Mixer, and Invited Poster Session

On Sunday evening, you'll be able to recognize your colleagues who are receiving various ASA awards from 7:30 p.m. - 8:30 p.m., right before the Opening Mixer. Founders and Fellows will be recognized on Tuesday night after the President's Address, but all other awards will be given during the new Sunday ceremony. Also, the invited poster session will run concurrent with the Opening Mixer (which will have plenty of free food and drink to offer). These will all be electronic posters, and David Dunson from Duke University will preside over the session. Please visit the posters and join us on Sunday evening.

Apart from these changes, there are many special invited sessions and panels this year that celebrate the global eminence of our profession in diverse directions and represent cutting-edge technical advancements. Here, I mention a few:

August 5, 2:00 p.m.

Reflection of Statistical Sciences: Past, Present, and Future. Celebration of the COPSS 50th Anniversary

August 6, 2:00 p.m.

International Efforts in Statistical Capacity Building: How You Can Help—A Celebration of J. Stuart Hunter's Contributions to *Technometrics* and Statistics

August 7, 10:30 a.m.

Large-Scale Inference

August 7, 2:00 p.m.

Public Lecture to Commemorate the 300th Anniversary of Ars Conjectandi—From Gambling to Global Catastrophe: Metaphors and Images for Communicating Numerical Risks

August 7, 8:30 a.m.

Recent Methodological Development in Genomic Studies of the Post-GWAS Era

Please consider adding these items to your JSM program at www.amstat.org/meetings/jsm/2013/onlineprogram/MyProgram.cfm. ■

JSM 2013 Keynote Speakers

The keynote addresses are special. Each speaker was chosen specifically for his or her vast knowledge of statistics and dedicated work in the field. Here, we introduce these speakers.

ASA President's Invited Address



Nate Silver

August 5, 4:00 p.m.

Nate Silver is founder of the award-winning political website FiveThirtyEight.com, where he publishes a running forecast of current elections and hot-button issues. Called a “number-crunching prodigy” by *New York Magazine*, he first gained national attention during the 2008 presidential election when he correctly predicted the results of the primaries and the presidential winner in 49 states. Silver’s prediction of the 2012 presidential election in all 50 states, silencing the traditional political pundits, has made him the public face of statistical analysis, data-driven journalism, and political forecasting.

Silver has appeared on national television programs ranging from MSNBC’s “Morning Joe” to Comedy Central’s “The Daily Show.” His *New York Times* bestseller, *The Signal and the Noise: Why Most Predictions Fail—But Some Don’t*, takes the reader on a tour of predictive statistical modeling and analysis across a host of fields, making it essential reading for anyone interested in the power of data-driven forecasting.

Before he came to politics, Silver established his credentials as an analyst of baseball statistics. He developed the widely acclaimed PECOTA system, which predicts player performance, career development, and seasonal winners and losers. He is author of a series of books on baseball statistics, including *Mind Game*, *Baseball Between the Numbers*, and *It Ain’t Over ‘til It’s Over*. He has written for ESPN.com, *Sports Illustrated*, and *The New York Times*.

Silver has been honored with a series of accolades, from being named one of the World’s 100 Most Influential People by *TIME* in 2009 to one of *Rolling Stone’s* 100 Agents of Change. And FiveThirtyEight.com won “best political coverage” in the 2008 Weblog Awards.

IMS Presidential Address



Hans Rudolf Kuensch

“Ars conjectandi: 300 Years Later”
August 5, 8:00 p.m.

Hans Kuensch was born in Zurich, Switzerland, and earned both his undergraduate degree and his PhD from ETH Zurich in 1975 and 1980, respectively. He was a researcher and postdoc in Japan from 1976–1977 and 1982–1983. In 1983, he took a position as professor in the department of mathematics at ETH Zurich that he still holds today. His work covers areas from probability theory and theoretical statistics to applications in environmental models.

ASA Deming Lecture



Vijay Nair

August 6, 4:00 p.m.

Vijay Nair is the D.A. Darling Professor of Statistics and Professor of Industrial and Operations Engineering at the University of Michigan. He is a Fellow of the American Statistical Association, American Association for the Advancement of Science, and Institute of Mathematics Statistics, as well as an elected member of the International Statistical Institute. His scientific interests are broad and include methodology, theory, and applications. He has worked in engineering statistics, reliability and degradation modeling, network tomography, design and analysis of experiments (including applications in behavioral intervention research), and quality improvement.

Wald Lectures I and II



Piet Groeneboom

Wald Lecture I: "Nonparametric Estimation Under Shape Constraints"
August 6, 4:00 p.m.
Wald Lecture II
August 7, 8:30 a.m.

Piet Groeneboom has been professor of statistics at Delft University since 1988, having previously been professor of statistics at the University of Amsterdam. He earned his PhD in mathematics in 1979 under the direction of J. Oosterhoff. He has been visiting professor at the University of Washington, Stanford University, and Université Paris VI and has done research in the areas of large deviations, stochastic geometry, particle systems, inverse statistical problems, and statistical inference under order restrictions.

Groeneboom has been on the editorial board of the *Annals of Statistics* (three times) and is a fellow of the Institute of Mathematical Statistics and elected member of the International Statistical Institute. He also received the Rollo Davidson Prize and is finishing a book to be published by Cambridge University Press on the topic of his Wald lectures.

ASA Presidential Address



Marie Davidian

"The International Year of Statistics: A Celebration and a Call to Action"
August 6, 8:00 p.m.

ASA President Marie Davidian is William Neal Reynolds Professor of Statistics at North Carolina State University and adjunct professor of biostatistics and bioinformatics at Duke University. She earned her doctoral degree in statistics from The University of North Carolina at Chapel Hill.

Davidian is an ASA Fellow and former chair of the Committee on Nominations, Samuel S. Wilks Memorial Medal Committee, and Biometrics Section. She is a past president of the Eastern North American Region of the International Biometric Society and current executive editor of the journal *Biometrics*. She is recipient of the George W. Snedecor and Florence Nightingale David awards, presented by the Committee of Presidents of Statistical Societies.

Since 2004, Davidian has co-directed the joint NC State-Duke Clinical Research Institute Summer Institute for Training in Biostatistics, which is

funded by the National Heart, Lung, and Blood Institute and seeks to encourage U.S. undergraduates to pursue advanced training in biostatistics and statistics.

Rietz Lecture



Larry Wasserman

"Geometric and Topological Inference"
August 7, 10:30 a.m.

Larry Wasserman is a professor in the department of statistics and machine learning at Carnegie Mellon University. His research interests include nonparametric inference, machine learning, statistical topology, and astrostatistics. He writes the wildly popular blog Normal Deviate at *normaldeviate.wordpress.com*. In his spare time, he enjoys mountain climbing, parachuting, and big game hunting.

Public Lecture to Commemorate the 300th Anniversary of *Ars Conjectandi*



David John Spiegelhalter

"From Gambling to Global Catastrophe: Metaphors and Images for Communicating Numerical Risks"
Wednesday, August 7, 2:00 p.m.

COPSS Fisher Lecture



Peter J. Bickel

"From Fisher to Big Data: Continuities and Discontinuities"
August 7, 4:00 p.m.

Peter Bickel earned his bachelor's and master's degrees in mathematics and his PhD in statistics at the University of California at Berkeley under the supervision of Erich Lehmann. He retired from the State Department in 2006, but continues an active research program in network theory and bioinformatics.

Bickel has made wide-ranging contributions to statistical science. His research in the early period was mostly theoretical, including nonparametrics,

sequential analysis, classical asymptotic theory, robust statistics, higher-order asymptotics, and nonparametric function estimation. His applied work includes an often-cited 1975 *Science* paper, in which he, Eugene A. Hammel, and J.W. O'Connell gave an explanation of an apparent gender bias in graduate admissions at UC Berkeley by relating it to Simpson's paradox.

Bickel has received the Institute of Mathematical Statistics' Wald and Rietz lectureships, the COPSS Presidents' Award, and a MacArthur Fellowship. He was elected to the National Academy of Sciences, the American Academy of Arts and Sciences, and the Royal Netherlands Academy of Arts and Sciences and earned an honorary doctoral degree from the Hebrew University of Jerusalem. Bickel contributed to the profession and society more broadly as president of the Institute of Mathematical Statistics and Bernoulli Society and by serving on committees of the National Academies and other organizations.

IMS Medallion Lecture I



Gady Kozma
"Linearly Reinforced Random Walk"
 August 4, 4:00 p.m.

IMS Medallion Lecture II



Jeremy Quastel
"The Kardar-Parisi-Zhang Equation and Universality Class"
 August 5, 8:30 a.m.

A specialist in probability theory, stochastic processes, and partial differential equations, Jeremy Quastel has been at the University of Toronto since 1998. A native of Canada, he studied at McGill University, then the Courant Institute at New York University, where he completed his PhD in 1990 under the direction of S.R.S. Varadhan. Quastel was a postdoctoral fellow at the Mathematical Sciences Research Institute in Berkeley, then a faculty member at the University of California at Davis until he returned to Canada in 1998.

Quastel's research is on the large-scale behavior of interacting particle systems and stochastic partial differential equations. He was a Sloan Fellow from 1996–1998 and an invited speaker

at the International Congress of Mathematicians in Hyderabad 2010. He gave the Current Developments in Mathematics 2011 and St. Flour 2012 lectures and was a plenary speaker at the International Congress of Mathematical Physics in Aalborg 2012.

IMS Medallion Lecture III



Martin Wainwright
"Statistics Meets Computation: Efficiency Trade-Offs in High Dimensions"
 August 5, 2:00 p.m.

Martin Wainwright joined the faculty at the University of California at Berkeley in 2004, and is currently a professor with a joint appointment between the department of statistics and department of electrical engineering and computer sciences. He earned his bachelor's degree in mathematics from the University of Waterloo, Canada, and his PhD degree in electrical engineering and computer science from the Massachusetts Institute of Technology, for which he was awarded the George M. Sprowls Prize in 2002. He is an associate editor for the *Annals of Statistics*, *Journal of Machine Learning Research*, and *Information and Inference*.

Wainwright is interested in large-scale statistical models and their applications to communication and coding, machine learning, and statistical signal and image processing. He received an NSF-CAREER Award in 2006, an Alfred P. Sloan Foundation Research Fellowship in 2005, an Okawa Research Grant in Information and Telecommunications in 2005, IEEE Best Paper awards from the Signal Processing Society in 2008 and Communications Society in 2010, the Joint Paper Award from IEEE Information Theory and Communication Societies in 2012, and several outstanding conference paper awards.

IMS Medallion Lecture IV



Lutz Duembgen
"Multiscale Methods and Shape Constraints"
 August 6, 8:30 a.m.

Lutz Duembgen studied mathematics and biology/chemistry at the University of Heidelberg, where he joined Statlab and finished his PhD thesis about

nonparametric change-point estimation in 1990 under D.W. Müller.

From 1990–1992, Duembgen spent two years at the University of California at Berkeley as a research fellow of the Miller Institute for Basic Research in Science. He then returned to Heidelberg and, after a short stay at the University of Bielefeld in 1993, started working on his habilitation thesis, which he finished in 1996. In 1997, he accepted a position as professor of stochastics at the (Medical) University at Lübeck and joined the Mathematical Institute. In 2002, Duembgen started working at the University of Bern, Switzerland, as a professor of statistics within the Institute of Mathematical Statistics and Actuarial Science and department of mathematics and statistics and continues there today.

IMS Medallion Lecture V



Peter Guttorp

"Pointing in New Directions"
August 6, 10:30 a.m.

Peter Guttorp is professor of statistics, guest professor at the Norwegian Computing Center, project leader for the Nordic Network on Statistical Approaches to Regional Climate Models for Adaptation, co-director of the Research Network on Statistical Methods for Atmospheric and Ocean Sciences, adjunct professor of statistics at Simon Fraser University, and member of the interdisciplinary faculties in quantitative ecology and resource management and Urban Design and Planning.

He earned a degree in journalism from the Stockholm School of Journalism in 1969; a BS in mathematics, mathematical statistics, and musicology from Lund University, Sweden, in 1974; a PhD in statistics from the University of California at Berkeley in 1980; and a TechD hc from Lund University in 2009. He joined the University of Washington faculty in September 1980.

Guttorp's research interests include uses of stochastic models in scientific applications in hydrology, atmospheric science, geophysics, environmental science, and hematology. He is co-editor of *Environmetrics*. He is also former president of the International Environmetrics Society, a Fellow of the American Statistical Association, and an elected member of the International Statistical Institute. From 2004–2005, he was the Environmental Research Professor of the Swedish Institute of Graduate Engineers.

IMS Medallion Lecture VI



Judea Pearl

"The Mathematics of Causal Inference: Use It or Lose It"
August 6, 2:00 p.m.

Judea Pearl, professor of computer science at the University of California at Los Angeles, is known for his contributions to artificial intelligence and his theories for inference under uncertainty, most notably the Bayesian network approach, which has influenced diverse fields such as statistics, philosophy, health, economics, social sciences, and cognitive sciences. A member of the National Academy of Engineering and a founding Fellow of the American Association for Artificial Intelligence, Pearl has won numerous awards, including the prestigious Turing Award "for fundamental contributions to artificial intelligence through the development of a calculus for probabilistic and causal reasoning." Using some of the proceeds from the award, Pearl established the Causality in Statistics Education Award, aimed at encouraging the teaching of basic causal inference in introductory statistics courses. Read more at <http://magazine.amstat.org/blog/2012/11/01/pearl>.

IMS Medallion Lecture VII



Ya'acov Ritov

"A Priori Analysis of Complex Models"
August 8, 8:30 a.m.

Ya'acov Ritov is a professor in the department of statistics of the Hebrew University of Jerusalem. He earned a BSc and MSc in electrical engineering from the Technion, Israel Institute of Technology, and a PhD in statistics from the Hebrew University of Jerusalem. After a short post-doctorate period at the University of California at Berkeley, he was appointed in Jerusalem in 1984. ■

Visiting Montréal: A Personal View

Marc Bourdeau, Montréal Chapter of the ASA



1: Old Montréal (Photo credit: ©Canadian Tourism Commission), 2: Outdoor staircases (Photo credit: ©Tourisme Montréal, Stéphan Poulin), 3: Parc La Fontaine (Photo credit: ©Tourisme Montréal), 4: Casino de Montréal (Photo credit: ©Casino de Montréal), 5: Bikes (Photo credit: ©Tourisme Montréal), 6: Saint-Paul Street (Photo credit: ©Ron Stern)

The city of Montréal is one of the most popular cities for visitors in North America. Whether visiting Montréal for business or pleasure, you will find amazing sights and attractions with wonderful events and entertainment, even in the heart of summer. Montréal is a great food and dining city, and Québec designers and artists provide ample food for thought and wonderment ...

By the way, you must know that Montréal has an incredible choice of small hotels, many of them in the Quartier Latin (near the Berri-Uquàm métro station and on Sherbrooke Street East) and all officially classified by the Ministère du Tourisme (see the signs on their front side). Some display the charm of old houses.

As you probably know, Montréal (notice the accent—the French touch) is a city mainly functioning in French, but English-speaking visitors have no problem at all. English is spoken everywhere, and the websites you find through a Google search will, by and large, have English translations of their pages.

Montréal (see Wikipedia for historical details) was founded in 1642 by French settlers headed by Paul Chomedey de Maisonneuve, who had the mystical plan to Christianize the so-called American Indians. Montréal is situated on a large island where the Saint Lawrence River—the Giant River as it is called in the Province of Québec—is narrow and controls the boat traffic on the river. Montréal rapidly became the commercial hub of the region and became the cultural capital of the province over the last half of the 20th century.

Actually, the island of Montréal is the largest of an archipelago, the Archipel de Hochelaga, comprising more than 200 islands. The largest of these accompanying islands, the Île Sainte-Hélène, was the main ground for Expo67, a World's Fair, where one can find several nice walks with sensational views on the city, especially in the sweet summer evenings. One also can find the Casino de Montréal, located in the former Expo67's spectacular French Pavilion. By the way, the restaurant in the Casino is renowned.

The Old City of Montréal has kept its architecture, essentially from the 18th and 19th centuries. It is very lively, and the nearby Old Port provides ample space for wonderful escapes from the surrounding hustle and bustle. If one of the numerous shows of the Cirque du Soleil is in town, you will find it there, and it is an absolute must. Each and every one is a treat for the whole family.

In the Old Port, you can walk through Rue Saint-Paul and admire its interesting arts and designer's shops. While there, why not take a rest with a cup of tea or glass of wine and a little something to eat in the beautiful bar-restaurant of the Hôtel Nelligan (106, Rue Saint-Paul ouest)?

Right in the center of the island of Montréal, one can find the Mont-Royal—the name of Montréal comes from this—given in 1535 by the 'discoverer' of Montréal, Jacques Cartier, who also was the first European (except for some Scandinavians and fishermen from Brittany who left just a few traces but no settlement) to explore the St. Lawrence River. Montréal had to wait a century for its official foundation.

The Mont-Royal is a small mountain (230m), the remnant of a volcano, that provides numerous walks and unforgettable views of the city. You can get to it by hiking one of the numerous trails, especially from the downtown area and McGill campus. From the trails all around the top of the Mont-Royal, you will notice several other old and dead volcanoes. Beaver Lake, on the Mont-Royal's summit, is refreshing on summer evenings.

Another outstanding visit is the Olympic Stadium (Métro: Pie-IX). The tower of the stadium gives a general view of the city, but more interesting seems to be the Montréal Biodôme, with a display of five ecosystems of America.

Right across Sherbrooke Street, on the northwest side of the Biodôme, you will find one of the great botanical gardens of North America. On its grounds is the spectacular Montréal Insectarium, which, just by itself, is worth a visit.

On Sherbrooke Street West, you will find high-brow shops close to the Musée des Beaux Arts (Museum of Fine Arts) and Musée McCord, maybe the most interesting museum in Montréal. In the Old Port, the historical Musée de la Pointe à Callière is worth a visit.

Montréal is a safe city, mostly due to strict arms control laws and a generous social system. In every neighborhood, there are parks, some of them quite old, with free swimming pools. Little coffee shops, and even restaurants, dot their borders.

The Parc Lafontaine provides a nice stopover, with a restaurant in its chalet. Nearby is a théâtre de verdure (outside theater), with many shows

Here are two websites to prepare you for your visit: <http://montrealtourismsvt.com> and www.tourisme-montreal.org.

offered during the summer, including a version of "Shakespeare in the Park" in the original English.

Montréal is a world-class city for food and gastronomy. You can trust most of the 'decent' restaurants (excluding the fast food joints that can be found the world over). And the menus and prices are on their doorsteps. Beware: Some of the more popular restaurants need reservations long in advance.

A distinctive feature of Montréal's architecture is its outside staircases, a remnant of the past when taxation rates were higher for buildings with inside staircases. They can be seen in all the districts situated in the so-called eastern part of the island. For instance, walk up or down the small side streets (NW-SE direction) off the Mont-Royal métro station on the Avenue du Mont-Royal. The so-called Plateau Mont-Royal is now one of the more fashionable gentrified neighborhoods, with colored brick houses and little arts and crafts shops on the cross streets.

You will find back alleys between houses' backyards—another distinctive Montréal attraction—between adjacent side streets in many districts in the eastern part of the city. Do not hesitate to take long walks through these back alleys, usually in the NW-SE directions, and wonder at some of the gardens or catch a glimpse of the inside décor of renovated houses.

Bicycles are everywhere. It is possible to rent bicycles by the day for a modest amount via the Bixi (Bikes & Taxi) System as long as you have a credit card with a chip and PIN. You will notice the Bixi parking 'lots' on many street corners, which are convenient for tourists. You can get rapidly and comfortably around Montréal, and even some suburbs. There is a wonderful set of bike lanes (www.caroulemontreal.com/en) throughout the city, and many bike shops also will rent bicycles by the day.

The métro system (subway) is fairly extended, and the bus network—with frequent schedules for most of them—is convenient. The schedules can be found with your cell phone (the phone numbers are on the bus signs) or somewhere near the bus stop. You can get daily passes or single tickets from the accommodation stores or métro stations. Normally, money cannot be used for the bus rides, but this is negotiable with the bus drivers, who are nice to tourists.

If you are planning a longer stay, visit *Amstat News* online at <http://magazine.amstat.org/blog/2013/05/01/excursions> and read about the cities that surround the Province of Québec. ■

What Happens at JSM Should Not Stay at JSM

How to get the most out of the Joint Statistical Meetings

Christopher Bilder, University of Nebraska-Lincoln

MontréalCanada
JSM2013



Palais des congrès de Montréal (Montréal Convention Centre)

Photo credit: © Marc Cramer / Palais des congrès de Montréal

The largest congregation of statisticians in the world happens every August during the Joint Statistical Meetings (JSM). More than 5,000 people attend these meetings, which are sponsored by seven statistical societies, including the American Statistical Association. The meetings offer a variety of activities such as attending research presentations, interviewing for jobs, taking continuing education courses, and browsing the exhibition hall. With so many opportunities, new attendees can be easily overwhelmed by their first JSM experience.

Based on my experience attending meetings over the last 13 years and the experiences of student groups I have led, I'm going to tell you how to get the most out of JSM. If you would like to share your own recommendations, I encourage you to submit a comment at [insert link](#).

Before JSM

Prepare before you leave. First, you should decide whether you want to give a presentation. For new attendees who choose to present, most give a contributed presentation, which is either an orally presented paper or poster. The deadline to submit a corresponding abstract is usually February 1, and all are accepted. Additional proof of progress (e.g., drafts of a paper) for the presentation must be submitted by mid-May.

A preliminary program listing the presentation schedule is available online in April. Because there may be more than 40 concurrent presentations at any time, it is best to arrive at JSM with an idea of which to attend. This can be done by examining the session titles and performing keyword searches in the online program prior to JSM. Additionally, this year there are several theme sessions celebrating the spirit of the International Year of Statistics.

Presentations are separated into invited, topic-contributed, and contributed sessions, each lasting 1 hour and 50 minutes. Invited and topic-contributed sessions include groups of related presentations that were submitted together and selected by JSM Program Committee members. Oral presentations each last for 25 or more minutes for invited and 20 minutes for topic-contributed. Contributed paper sessions include groups of 15-minute oral presentations. This year, the program committee is introducing speed sessions. See sidebar for details.

Unlike invited and topic-contributed sessions, contributed presentations are submitted individually and then grouped by JSM Program Committee members. Poster presentations (most are within contributed sessions) involve speakers being available for questions next to their displayed poster during the entire session.

Online registration for JSM begins around May 1. For members of a sponsoring statistical society, the cost is \$400 in 2013 during the early registration period. The cost increases to \$490 if you register at JSM. Registration for student members is only \$90 in 2013, and this rate is available at any time. Also starting around May 1, you can reserve a hotel room through the JSM website.

A number of hotels near the convention center are designated as official conference hotels, and they discount their normal rates. However, even with a discount, you can expect to pay \$200 or more per night for a room. Most meetings also offer a less-expensive lodging option for students, usually housing at a nearby university or hostel.

Attending JSM can be expensive. Students have several options to reduce the cost burden. First, ask your adviser or department for funding. Many departments offer financial support for students who present their research at JSM. Students also may qualify for funding from the student activities office on their campus. For example, when I was a student, my department's statistics club received funding this way, which paid for most of my first JSM expenses.

In addition to school-based resources, many ASA sections sponsor student paper competitions that provide travel support to award winners. For example, the Biometrics Section of the ASA sponsors the David P. Byar Young Investigators Award, with \$1,500 awarded to a chosen student. Most competitions require a completed paper to be submitted prior to JSM.

At JSM

JSM begins on a Sunday afternoon in late July or early August. Business casual clothing is the most prevalent attire, but some attendees wear suits and others wear T-shirts and shorts. When you arrive at JSM, go to the registration counter at the convention center to obtain your name tag and conference program book. The program book will contain a map of the convention center that can be useful for finding session rooms.

In Montréal, the JSM Program Committee 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.

To welcome and orient new attendees, the JSM first-time attendee orientation and reception is scheduled for early Sunday afternoon. Also, the opening mixer on Sunday evening provides drinks, hors d'oeuvres, and the opportunity to meet other attendees.

The main sessions start on Sunday at 2:00 p.m. Many of the research presentations are difficult to understand completely. My goal for a session is to have 1–2 presentations in which I learn something relevant to my teaching or research interests. This may seem rather low, but these items add up after attending many sessions.

For attendees who teach introductory courses, the sessions sponsored by the ASA Section on Statistical Education are often the easiest to understand. Many



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Important Links

Below are a number of web links corresponding to the topics described in this article:

JSM 2013

www.amstat.org/meetings/jsm/2013/index.cfm

Program

www.amstat.org/meetings/jsm/2013/program.cfm

Job seekers

www.amstat.org/meetings/jsm/2013/index.cfm?fuseaction=applicants

Continuing Education courses and monitors

www.amstat.org/meetings/jsm/2013/ce.cfm#monitors

Student paper competitions

www.amstat.org/sections/studentpaperawards.cfm

of these sessions share innovative ideas about how to teach particular topics.

Introductory overview lectures are another type of session that has easier-to-understand topics. Recent lectures have included introductions to missing data, spatial analysis, and multiple testing. There are also many continuing education courses available for an additional fee. However, you can attend a course for free by volunteering prior to JSM to be a monitor. Monitors perform duties such as distributing and picking up materials during the course. As an added benefit, monitors can attend one additional course for free without any duties.

Keynote addresses at JSM are usually scheduled for late afternoon on Monday through Wednesday. On Tuesday evening, the ASA presidential address is given, along with a number of awards and introductions of the new ASA fellows. The fellows introduction is especially interesting because approximately 50 ASA members

(<0.33% of all members) are recognized for their contributions to the statistics profession.

In addition to presentations, the JSM EXPO features more than 50 companies and organizations exhibiting their products and services. Many exhibitors give away free items (e.g., candy, pens, etc.). All of the major statistics textbook publishers and software companies are there. Textbook publishers offer a sizable discount on their books during JSM, and this discount is usually available for a limited time after JSM. Software companies sometimes give away free trial editions of their programs.

The JSM Career Placement Service provides a way for job seekers and employers to meet. This service offers an excellent way to interview with many companies during a short time period. Pre-registration is required, and the fee is discounted if you register before mid-July. The service works by providing an online message center for job seekers and employers to indicate their interest in each other. Once

a common interest is established, an interview can be arranged during the meetings.

Other activities at JSM include the following:

- Shopping at the ASA Marketplace to purchase a statistics-themed T-shirt or mug
- Attending an organized roundtable discussion during breakfast or lunch about a topic of interest (pre-registration is required)
- Using the free Internet access at the Cyber Center
- Taking a little time off from JSM to go sightseeing

After JSM

JSM ends in the early afternoon on a Thursday. Don't let what happens at JSM stay at JSM, though. The first thing I do after the meetings is prepare a short review of my activities. Using notes I took during sessions, I summarize items from presentations I want to examine further. I also summarize meetings I had with individuals about research or other important topics. Much of this review process starts at the airport while waiting for my return flight.

If you give a presentation at JSM, you may submit a corresponding paper to be published in the conference proceedings. Papers are not peer-reviewed in the same manner as for journals, but authors are encouraged to have others examine their paper before submission. The proceedings are published online around November. Authors retain the right to publish their research later in a peer-reviewed journal. ■

2013 NISS/ASA Writing Workshop for Junior Researchers

Keith Crank

The National Institute of Statistical Science (NISS) and American Statistical Association will hold a writing workshop for junior researchers (subject to availability of funds). The goal of the workshop is to provide instruction for writing journal articles and grant proposals.

Participants will be required to provide a recent sample of their writing, which will be reviewed by a senior mentor. The sample could be a current draft of an article to be submitted for publication, or it could be an early version of a grant proposal. (Submission of the manuscript will be required as part of the registration process. Prior experience suggests that the best results come from submitting an early draft of something that is written solely or primarily by the participant.)

The mentors will be former journal editors and program officers, who will critique (a portion of) the submitted material. Individual feedback will be provided as part of the opening session, and participants will be expected to prepare a revision in response. The workshop will open with a one-day session of general instruction in effective writing techniques and close with discussion and debriefing at a follow-up lunch.

The full-day session is scheduled for August 4, in Montréal, Québec, Canada. At the close of the formal activities, mentors will meet individually with participants to go over the writing samples they submitted. Each participant will then prepare a revision of a critiqued portion of the paper and return this to the mentor by the evening of August 6. Mentors and participants will meet again in conjunction with a lunch on August 7 to discuss the success of the revisions. The lunch program also will include general feedback to participants, mentors, and organizers.

Attendance will be limited and depend on the number of mentors available. To apply, go to www.amstat.org/meetings/wwjr/registration. Applications are due by June 1, and successful applicants will be notified by June 30. Applications received after June 1 will be considered if space is available. There is no fee for participation. Participants will receive lunch on August 4 and August 7. Participants must agree to attend both the full Sunday session and the Wednesday lunch. We have requested funding for partial travel support.

This workshop is designed for researchers with a recent PhD in either statistics or biostatistics. Top



priority will go to those who have held the PhD for 0–3 years. The limited available funding will be used to support attendance by researchers at U.S. institutions. Current PhD students who are completing their degree before the end of the summer and who will be at U.S. institutions in the fall also will be considered. If space is available, researchers at institutions outside the United States will be admitted to the workshop, but will not be provided with travel support. ■

MontréalCanada
JSM2013
August 3-8

Registration for JSM Now Open

Celebrate the International Year of Statistics
Learn more at www.statistics2013.org.

Join the largest gathering of statisticians in the world. Enjoy technical sessions (including the first look at all-new SPEED sessions), special receptions and gatherings, the exhibit hall, Continuing Education courses, the Career Placement Service, and more.

Early Registration Deadline: May 30
Regular Registration Deadline: July 1
Late Registration Deadline: July 18

Register early and SAVE!
Learn more at www.amstat.org/meetings/jsm/2013

Education Updates and Resources

Rebecca Nichols, ASA Director of Education

The American Statistical Association is dedicated to and involved in enhancing statistics education at all levels. The following describes new or ongoing statistics education projects, resources, and opportunities.

K-12 Statistics Education

There is a new national focus on statistics education at the K–12 level, with statistics taking a more prominent role in the Common Core State Standards (CCSS). There is great need for professional development and resources to assist teachers who are teaching the increased statistics content. For information regarding the statistics content in the CCSS and the ASA's *Guidelines for Assessment and Instruction in Statistics Education (GAISE) Report: A Pre-K–12 Curriculum Framework* related to teacher preparation, see Christine Franklin's article, "Common Core State Standards and the Future of

Teacher Preparation in Statistics," at <http://bit.ly/XHTMXC>.

The ASA and National Council of Teachers of Mathematics (NCTM) released a statement calling on universities and school administrators across the country to provide high-quality training and professional-development opportunities that will help prepare teachers lead classes on statistics. See <http://bit.ly/YQVq7L>.

In light of the CCSS, the Conference Board of the Mathematical Sciences (CBMS) released *The Mathematical Education of Teachers II (MET2)*, which focuses on the mathematics and statistics preparation of K–12 teachers. The ASA review of *MET2* was well received by CBMS, which encouraged the ASA to expand recommendations to a white paper. The ASA board recently funded this project to create a companion report on the statistics education of teachers, which will be led by

Christine Franklin and Tim Jacobbe, both members of the ASA/NCTM Joint Committee. For information, visit www.cbmsweb.org/MET2/index.htm.

As part of the International Year of Statistics (Statistics2013), teachers everywhere can access a wealth of statistics instruction tools and resources from around the world. Schools also can sign up to participate in Statistics2013. See www.statistics2013.org.

ASA hosts the U.S. version of Census at School, a free international classroom project that engages students in grades 4–12 in statistical problem-solving using their own real data. Students complete an online survey, analyze their class census results, and compare their class with random samples of students in the U.S. and other countries. A number of online webinars and other resources are available to help educators learn more about the project and how to explore the data. As of April 1, 2013, more than 12,500 students have participated from 43 states, plus Washington, DC. Information about how to get involved with the program is at <http://magazine.amstat.org/blog/2012/02/01/censusatschool-2>.

The ASA is involved in enhancing K–12 statistics education, mainly through the efforts of the ASA/NCTM Joint Committee on Curriculum in Statistics and Probability. Committee projects include:

Bridging the Gap Between Common Core State Standards and Teaching Statistics, designed to help educators bring statistics into elementary- and middle-school classrooms, www.amstat.org/education/btg

Conferences

The 2013 U.S. Conference on Teaching Statistics (USCOTS '13) will be held May 16–18 at the Embassy Suites Hotel & Conference Center in Raleigh-Durham (Research Triangle), North Carolina. The theme of the conference is "Making Change Happen." Visit www.causeweb.org/uscots for more information.

Recordings are freely available online for the 2012 Electronic Conference on Teaching Statistics (eCOTS). The next eCOTS will be held in 2014.

The International Association for Statistical Education (IASE) will hold their 2013 satellite conference August 22–24 in Macao, China, before the ISI meeting in Hong Kong. The theme is "Statistics Education for Progress."

Statistics education sessions will be held at the 2013 Joint Statistical Meetings August 3–8 in Montréal, Québec, Canada. The conference theme is "Celebrating the International Year of Statistics."

The 9th International Conference on Teaching Statistics (ICOTS 9) will be held in Flagstaff, Arizona, July 13–18, 2014. The theme of ICOTS 9 is "Sustainability in Statistics Education."

Making Sense of Statistical Studies, which provides investigations for upper middle-school or high-school students to gain experience in designing and analyzing statistical studies, www.amstat.org/education/mss

The printed *GAISE Report: A Pre-K–12 Curriculum Framework*, www.amstat.org/education/gaise

The *Statistics Teacher Network (STN)* newsletter, www.amstat.org/education/stn

Statistics Education Web (STEW) offers peer-reviewed K–12 lesson plans tied to the new standards. Statistics educators are invited to submit lesson plans for publication on the STEW website. There is a new competition offering cash prizes for the best new STEW lesson plans using U.S. Census at School data.

Free webinars on K–12 statistics education topics are available. This series was developed as part of the follow-up activities for the Meeting Within a Meeting (MWM) statistics workshop for math and science teachers. The next MWM statistics workshop and the Beyond AP Statistics (BAPS) workshop will be held in conjunction with the 2014 Joint Statistical Meetings in Boston. An experimental MWM workshop will be held outside JSM for the first time this summer.

The ASA/NCTM committee also oversees the annual poster and project competitions for K–12 students, which offer opportunities for students to formulate questions and collect, analyze, and draw conclusions from data. Information about starting a regional poster competition is available at <http://magazine.amstat.org/blog/2012/02/01/censusatschool-2>. We are seeking judges for the 2013 project competition that takes place via email over the summer and requires about four hours. If interested, email Jamis Perrett at jamis@monsanto.com.

Competition for Best STatistics Education Web (STEW)/Census at School Lesson Rules and Guidance

Write a STEW lesson plan that incorporates data from the Census at School website. The lesson plan should:

- Demonstrate statistics concept(s) from the grades 4–12 curriculum using Census at School data
- Generate excitement about statistics
- Follow the STEW template, GAISE guidelines (www.amstat.org/education/gaise), and Common Core State Standards (www.corestandards.org)

Prizes*

Grand Prize: \$500, Silver Medal Prize: \$300, Bronze Medal Prize: \$200

*The ASA reserves the right to present fewer awards should entries not be of sufficient quality.

Eligibility and Entry Dates

ASA members, K–16 teachers, and students involved in education—undergraduate or graduate—are eligible to enter. Entries are due by July 15, and winners will be announced in October.

To Enter

Submit a Word version of the completed STEW lesson to steweditor@amstat.org.

All entries will be considered for publication on the STEW website and Census at School resources website.

Judging

Entries will be judged on the following:

- Completeness of STEW lesson plan (including compliance with the STEW format)
- Originality of the incorporation of Census at School data
- Incorporation of the GAISE guidelines (www.amstat.org/education/gaise) and Common Core State Standards (www.corestandards.org)
- Judging will be done by the STEW editor, STEW associate editors, and U.S. Census at School representatives.

Further Guidance

For a description of STEW, the STEW lesson plan template, and example STEW lessons, visit the following:

STEW website: www.amstat.org/education/STEW

Census at School website: www.amstat.org/censusatschool

Census at School participant instructions: www.amstat.org/censusatschool/participantinstructions.cfm

Census at School resources: www.amstat.org/censusatschool/resources.cfm

Additional questions can be directed to Mary Richardson, STEW editor, at steweditor@amstat.org or (616) 331-3364.

The ASA/NCTM Joint Committee members also are involved in LOCUS, an NSF-funded project focused on developing assessments of statistical literacy. The intent of these assessments is to provide teachers, educational leaders, assessment specialists, and researchers with a valid and reliable assessment of statistics consistent with the (CCSS) and Pre-K-12 GAISE Framework. These assessments also could serve as a placement test or pre/post assessment for college students' knowledge of statistics. For information about the LOCUS project, contact Jacobbe at jacobbe@coe.ufl.edu or visit <http://education.ufl.edu/locus>.

The ASA is now a member of the Science, Technology, Engineering, and Mathematics (STEM) Education Coalition that is involved in national policy efforts and works to support STEM programs for teachers and students. The ASA also is involved with outreach efforts,

including booths at the NCTM annual meeting and USA Science & Engineering Festival. There are flyers available to download regarding education, careers in statistics, and contributions of statistics to society at www.amstat.org/education, www.amstat.org/careers, www.amstat.org/policy/statsig.cfm, and www.statistics2013.org.

Undergraduate Statistics Education

The ASA/AMATYC Joint Committee is investigating ways to increase the professional development opportunities for two-year college teachers and working with the Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) on outreach efforts. The ASA/MAA Joint Committee on Undergraduate Statistics and ASA Section on Statistical Education also are involved in efforts to enhance undergraduate education. Undergraduate statistics education resources

are available at www.causeweb.org, www.amstat.org/education/resourcesforundergradteachers.cfm, and www.amstat.org/education/pdfs/ASA_flyer_educators.pdf.

The *Journal of Statistics Education (JSE)* is beginning a webinar series through CAUSEweb in June. Authors will discuss their work and answer questions. The series will generally take place on the third Tuesday of each month from 12 p.m. to 1 p.m. (Eastern time). Once the webinars are recorded, links will be available at www.amstat.org/publications/jse and CAUSEweb.org. Also visit CAUSEweb for information about other webinars and resources.

The Causality in Statistics Education Award is aimed at encouraging the teaching of basic causal inference in introductory statistics courses. The prize will be given in 2013, 2014, and 2015.

The Carnegie Foundation for Advancement of Teaching is leading the Statway project. See www.carnegiefoundation.org/statway. ■

2013 SUMMER INSTITUTES & CONFERENCES

at the University of Washington, Seattle, Washington, USA

- ◆ **18th Summer Institute in Statistical Genetics**
8-26 July 2013, <http://sisg.biostat.washington.edu>
- ◆ **5th Summer Institute in Statistics and Modeling in Infectious Diseases**
8-24 July 2013, <http://depts.washington.edu/sismid/>
- ◆ **2nd Summer Institute in Biostatistics**
12-16 August 2013, <http://sib.biostat.washington.edu>
- ◆ **SQG Conference: "Impact of Large-Scale Genomic Data on Statistical and Quantitative Genetics"**
24-26 November 2013, www.biostat.washington.edu/sqg_conference

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ASA, NCTM Call on School Administrators, Universities to Increase Training for Pre-K–12 Statistics Teachers

Organizations adopt joint position statement outlining teacher training needs

The American Statistical Association and the National Council of Teachers of Mathematics (NCTM) are calling on universities and school administrators across the country to provide high-quality training and professional-development opportunities that will help prepare future and current teachers to lead classes on statistics.

Statistics is an increasingly important scientific field of study and a key component of the Common Core State Standards for Mathematics, which was developed jointly in 2010 by the National Governors Association Center for Best Practices and the Council of Chief State School Officers.

As a result of this rise in prominence, “teachers of mathematics and others who will teach statistics must have deep knowledge and understanding of statistics and the way that students learn the subject,” assert the ASA and NCTM in their joint statement.

Among the specific recommendations the groups make are:

- School administrators need to provide professional development opportunities specifically related to statistics content and offer support for teachers to attend these opportunities.
- Professional development courses and workshops for future and current teachers need to model effective pedagogies for teaching statistics.
- Faculty teaching statistics courses and workshops need to be familiar with pedagogies appropriate for the pre-K–12 classroom.
- Statistics teachers need to work together with education faculty to provide coursework that emphasizes stronger conceptual knowledge of statistics and the essential ideas of statistical thinking and problemsolving.
- State departments of education need to work together with national professional organizations such as the ASA, NCTM and



others to ensure the development of uniform resources, assessments and delivery models of professional development in statistics.

“Statistics is an integral part of mathematics education, but also of the education of any informed, productive citizen in any career or academic pursuit,” said NCTM President Linda Gojak. “This joint position statement describes a foundation of what is most important in statistics education, and it recommends steps to take to improve the statistical literacy of all students.”

“ASA is committed to working with NCTM and all concerned stakeholders—math and science organizations, national teacher groups, state education administrations, university departments and faculty—to ensure our nation’s teachers can access the training programs they need to teach statistics to their students,” said ASA President Marie Davidian. “We believe the roadmap outlined in this joint statement is an important first step in getting university faculty, school administrators and teachers thinking about how to best prepare statistics teachers.”

Read the full ASA-NCTM joint statement at www.nctm.org/uploadedFiles/About_NCTM/Position_Statements/1Statistics%20joint%20ASA%20NCTM%20statement%20021113.pdf. ■

Sumona Mondal has been granted tenure and promoted from assistant professor to associate professor of mathematics and computer science at Clarkson University.

Mondal joined Clarkson in 2007 after graduating from the University of Louisiana at Lafayette with a PhD in statistics. She earned her bachelor's and master's in statistics from the University of Calcutta, India. Her principal research interest is in constructions of tolerance regions for some multivariate linear models, which is a blend of multivariate data analysis and inferential procedures. She also is involved in the formulation of theoretical problems and development of statistical methodologies for problems related to bioengineering, environmental sciences, and physical therapy.

Mondal is a member of the American Statistical Association, Institute of Mathematical Statistics, American Mathematical Society, and Indian International Statistical

Association. She has frequently served as an ad hoc reviewer for highly respected academic journals in applied statistics. Her research has been supported through grants from the National Science Foundation, National Institutes of Health, and other funding agencies. ■

John Tarnai, former director of the Washington State University Social and Economic Sciences Research Center (SESRC) has been named the 2013 recipient of the John M. Kennedy Achievement Award given by the Association of Academic Survey Research Organizations (AASRO) for his service and leadership in academic survey research.

Tarnai was director of SESRC from 1996 until his death in 2012. He was a strong supporter of and contributor to the science of sample surveys and was an expert and innovator in the practical aspects of conducting survey research. Under his leadership, SESRC became an established, well-funded survey

organization that has consistently been awarded \$2–\$3 million of survey contracts annually.

As director of SESRC, a founding member of AASRO, and AASRO president, Tarnai was known for his generosity in providing both formal and informal assistance and mentoring to others in the field. Many of his colleagues sought and benefited from his consultation and advice. John Kennedy, former director of the Indiana University Center for Survey for Research, said, "For the 25 years I directed the survey center at Indiana University, I consulted with John on both technical and personnel matters. John was always insightful and helpful beyond what could be expected of a colleague."

Perhaps Tarnai's most lasting contribution to the survey research field came from his dedication to the development of new survey researchers. Rita Koontz, who worked with Tarnai for 31 years at SESRC, said, "John always saw the best in each of us and brought out potential we didn't see in ourselves. He unfailingly supported each person to grow and learn as much as they could."

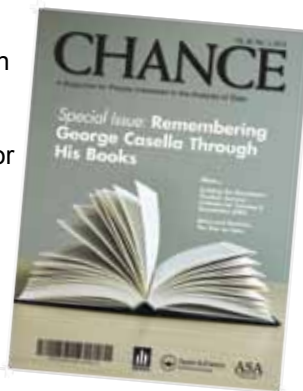
Academic survey research from the students and staff at SESRC to the international survey community benefited from John Tarnai's contribution to survey methods. It is for these reasons that AASRO created the John Tarnai Memorial Scholarship, which will provide funding to outstanding early-career researchers working in academic survey organizations to attend a survey research conference. It is also for these reasons that AASRO is honored to award John Tarnai the John M. Kennedy Achievement Award. ■

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

Editor Sought for *CHANCE* Magazine

Nominations and applications are being sought for the next editor of *CHANCE* magazine. Working with the editorial board and the ASA's magazine staff, the editor will provide direction and vision for the magazine, which has been published by the ASA for more than 20 years. The editor's term will be from 2014 to 2016.

Along with a curriculum vitae and the names of two references, the applicants should provide a statement of vision for *CHANCE*. Nominations and applications should be submitted by June 24 to Megan Murphy, ASA communications manager, at megan@amstat.org.



<http://chance.amstat.org>

sectionnews

Biometrics

The Biometrics Section is sponsoring the following six short courses during this year's Joint Statistical Meetings in Montréal, Canada:

- Statistical Methods in Genetic Association Studies, by Danyu Lin, University of North Carolina
- Personalized Medicine and Dynamic Treatment Regimes, by Michael Kosorok, University of North Carolina, and Eric Labler, North Carolina State University
- Analysis of Interval-Censored Survival Data, by Philip Hougaard, Lundbeck
- Statistical Methods for Medical Imaging Analysis, by Hongtu Zhu and Haipeng Shen, University of North Carolina
- Statistical Evaluation of Prognostic Biomarkers, by Patrick J. Heagerty, University of Washington, and Paramita Saha-Chaudhuri, Duke University
- Practical Software Engineering for Statisticians (cosponsored with Section on Statistical Computing), by Murray Stokely, Google

In addition to the short courses, the section will also sponsor the following six invited sessions:

- Current Statistical Issues in Comparative Effectiveness Research
- Dynamic Treatment Regimes and Adaptive Designs Toward Personalized Health Care
- Emerging Statistical Methods for Big Data
- Frontiers in Longitudinal and Survival Data Analysis
- Big Data, Big Impact When Statistics Matter
- Questions in Cancer Research: What Are the Most Pressing Statistical Problems?

To register for this year's JSM, visit www.amstat.org/meetings/jsm/2013/index.cfm.

It is also time to think about invited sessions for ENAR 2014, which will be March 16–19 in Baltimore, Maryland. If you are interested in organizing an invited session, contact the ENAR

section representative, Jason Roy, at jaroy@mail.med.upenn.edu.

Invited session ideas are also welcome for next year's JSM, which will be August 2–7 in Boston, Massachusetts. Contact biometrics 2014 program chair, Jonathan Schildcrout, at jonathan.schildcrout@vanderbilt.edu. Submit ideas for short courses to the section's Continuing Education chair, Donglin Zeng, at dzeng@email.unc.edu.

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

Biopharmaceutical

The third biennial Nonclinical Biostatistics Conference will be at Villanova University in Villanova, Pennsylvania, from October 15–17. The conference was created to provide a venue for technical presentations, professional growth, and recognition for those statisticians engaged in nonclinical statistics. The theme this year is “Nonclinical Statistics: Improving Pharmaceutical Discovery, Development, and Manufacturing.”

Biopharmaceutical Symposium to Offer Tutorials, Short Courses

The 20th anniversary meeting of the Biopharmaceutical Applied Statistics Symposium (BASS XX) will be held November 4–7 at the Double Tree (by Hilton) Hotel in downtown Orlando, Florida.

At least 16 one-hour tutorials on diverse topics pertinent to the research, clinical development, and regulation of pharmaceuticals will be presented by speakers from academia, the pharmaceutical industry, and the U.S. Food and Drug Administration (FDA).

Two parallel one-day short courses will be presented November 6–7, and the keynote address will take place on November 5, with a reception following. The FDA biometrics session will be the morning of November 6.

BASS is a nonprofit entity. Its purpose is to raise funds for graduate studies in biostatistics.

For more information, visit www.bassconference.org, or contact Karl E. Peace at (912) 681-6980, peacekarl@frontier.com, or bassxx2013@gmail.com.

To view
section news in
its entirety, visit
[http://magazine.
amstat.org](http://magazine.amstat.org).

Douglas Throckmorton, deputy director for the Center for Drug Evaluation and Research, will give the keynote address, and ASA President Marie Davidian will speak on Tuesday evening, followed by a special reception in her honor.

The conference will begin with two parallel short courses—Strategies for Accelerating Formulation Development and Applied Bayesian Statistics for Nonclinical Areas: From Theory to Examples with Programming.

Also, there will be three tracks with sessions on Tuesday afternoon and Wednesday and Thursday morning. The three tracks are Discovery/Pharmacology/-omics; Safety/Toxicology/Preclinical; and Chemistry, Manufacturing, and Controls. Each track has three invited speakers and four contributed speakers spread throughout the three-day conference.

Students are encouraged to participate in the conference activities. To offset travel costs, limited scholarships are available to students, with preference given to students who present posters. The best student poster will receive an award of \$250. For additional information, contact Paul Lupinacci at info@NCB2013.org.

Abstract submission is now open for both oral presentations and posters. Abstracts must be submitted by June 10. For more information about the conference, visit www.NCB2013.org.

Physical and Engineering Sciences

The Section on Physical and Engineering Sciences mixer at the Joint Statistical Meetings (JSM) has long been one of the most popular SPES-sponsored events. You can contribute to this fun-filled evening by donating a door prize. All types of prizes are welcome and can be of any value (including no value whatsoever). Software, books, T-shirts, toys, bobble heads, etc. are all welcome. If you or your company has items to donate, please contact Liz Schiferl at Elizabeth.Schiferl@Lubrizol.com.

SPES is pleased to announce “Methods for Designing and Analyzing Mixture Experiments,” a short course by John Cornell and Greg Piepel, to be held October 16 in advance of the Fall Technical Conference in San Antonio, Texas. Mixture experiments involve changing the proportions of the components of a mixture that make up a product and then observing the resulting changes in the product’s characteristics. This short course will provide an overview of various approaches and methods used in designing and analyzing these experiments. The course is

designed for anyone (statistician or nonstatistician) wanting to know about these statistical methods.

To read about this short course and additional section news, visit <http://magazine.amstat.org/blog/category/membernews/amstatsections>.

Quality and Productivity

The Quality and Productivity (Q&P) section of the ASA has put together an exciting program for the Joint Statistical Meetings this year. First, there is the invited session, titled “A Decade of Profile Monitoring: What’s Next?” that will cover the research in this area. Other Q&P-sponsored sessions will cover topics in quality control, SPC, multivariate SPC, reliability testing, statistical engineering, and more.

There also will be a special memorial session for Genichi Taguchi. This session will feature speakers who knew him personally, including his own son, Shin Taguchi.

Last, Q&P is sponsoring the following five roundtable events:

- Outlier Testing, led by Thomas Bzik, Air Products and Chemicals
- Perspectives on High-Dimensional Data Analysis, led by S. Ejaz Ahmed, Brock University
- Using Statistical Engineering to Attack Large, Complex, Unstructured Problems, led by Roger Hoerl, Union College
- Achieving Process Excellence Using Design of Experiments, led by Daksha Chokshi, Pratt & Whitney
- Multiple Response Process Optimization Using Process Capability, led by John Peterson, GlaxoSmithKline

Visit the JSM program website at www.amstat.org/meetings/jsm/2013/onlineprogram for details.

Statistics and the Environment

The ASA Section on Statistics and the Environment is sponsoring the following topic-contributed sessions at this year’s Joint Statistical Meetings:

- Developing Statistical Methods in Setting Environmental Exposure Limits; Organizer: Jing Zhang, Miami University

- Stochastic Downscaling Methods in Geosciences, *Organizer: Julie Carreau, Institut de Recherche pour le Développement*
- Recent Developments in Statistical Methods for Ecological Data, *Organizer: Devin Johnson, National Marine Mammal Laboratory*
- Survey and Statistical Methods in Forestry Research, *Organizer: Michael D. Larsen, The George Washington University*
- Modeling Spatially Indexed Ecological Data, *Organizer: Devin Johnson, National Marine Mammal Laboratory*
- Environmental Impacts on Public and Ecological Data, *Organizer: Matthew Heaton, National Center for Atmospheric Research*

Visit www.amstat.org/meetings/jsm/2013 for details.

In addition to JSM, the section invites members to attend several conferences this year, including the Spatial Statistics 2013 conference, “Revealing Intricacies in Spatial and Spatio-Temporal Data with Statistics,” to take place June 4–7 in Columbus, Ohio. See www.spatialstatisticsconference.com for information.

Also in June, The International Environmetrics Society is sponsoring their 23rd annual conference in Anchorage, Alaska, from June 10–14. The theme this year is “Quantitative Methods, Applications, and Issues in Natural Resources: Assessment, Regulation, Development, Use, and Conservation.” For information, visit <http://ties2013.com>.

Finally, the third International Workshop on Climate Informatics will take place September 26–27 in Boulder, Colorado. For information, visit www2.image.ucar.edu/event/ci2013.

To contribute to *ENVR News*, email the ENVR publications chair, Kate Calder, at calder@stat.osu.edu. Conference and webinar announcements of interest to the ENVR community are welcome.

Statistics in Epidemiology

The Section on Statistics in Epidemiology will sponsor the short course “Causal Inference and Its Application in Health Sciences” at the Joint Statistical Meetings. Instructors are Miguel Hernán of Harvard and Dylan Small of the Wharton School

The first half of this short course, led by Hernán, presents a framework for causal inference from observational studies and recent methodological developments, with an emphasis on complex longitudinal data. The second half, led by Small, focuses on instrumental variable methods for causal inference in clinical trials and observational studies to control for unmeasured confounding. Software for structural models and instrumental variable methods will be discussed and real examples will be used for illustration.

Visit the JSM program at www.amstat.org/meetings/jsm/2013/onlineprogram for details.

Survey Research Methods Section

The Survey Research Methods Section (SRMS) is happy to announce that we are sponsoring five roundtables and one Continuing Education course at the 2013 Joint Statistical Meetings. Please consider signing up for these options when you register for the conference. Remember that space is limited, so sign up soon.

The five SRMS-sponsored roundtables are as follows:

- Calibration Weighting: What We Know Now; What We Still Need to Know, led by Phil Kott
- Can Randomized Response Techniques Play a Role in the Era of Big Data?, led by Sarjinder Singh
- Practical Guidelines for Dual-Frame RDD Survey Methodology, led by Mansour Fahimi
- Community Stakeholder Surveys: Asking More with Less, led by Barbara Robles
- GIS and Survey Research, led by Karol Krotki

The SRMS-sponsored Continuing Education course is titled “Practical Tools for Designing and Weighting Survey Samples.” The course presenters are Rick Valliant, Frauke Kreuter, and Jill Dever.

For more information about the course and roundtables, visit the 2013 JSM online program at www.amstat.org/meetings/jsm/2013/onlineprogram and search on SRMS-sponsored events. ■

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

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

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

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

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

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

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

District of Columbia

■ Associate to Full Research Professor, Co-PI or PI. Provide direction in design, conduct and analysis of major multi-center medical studies and publication of major papers. Advising students and teaching. Basic Qualifications: Doctorate in statistics or biostatistics or equivalent doctoral educational attainment. Review of applications will begin on May 1, 2013 and is ongoing until the position is filled. For application instructions go to: www.bsc.gwu.edu. EOE/AA.

New Jersey

■ Janssen Research & Development, LLC, a Johnson and Johnson Company has an exciting opportunity for a scientific director of statistical modeling and simulation to be located at our Spring House, PA or Raritan, NJ, facility. This individual will be responsible for identifying opportunities to utilize innovative designs and statistical analysis methods in drug development. Apply online at www.Click2Apply.net/v478ww9. EOE.

New York

■ The department of biostatistics and computational biology at the Dana-Farber Cancer Institute is conducting a search for an experienced master's-level biostatistician. Master's degree and 3 years experience required. Some travel nationally and internationally is also a requirement for this position. Dana-Farber Cancer Institute is an Affirmation Action/Equal Opportunity Employer - committed to diversity and inclusion in our workforce. For more information visit: www.Click2Apply.net/qd6b2bk.

Pennsylvania

■ Janssen Research & Development, LLC, a Johnson and Johnson Company has an exciting opportunity for a scientific director of statistical modeling and simulation to be located at our Spring House,

www.westat.com

Survey Sampling Statistician

EOE

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

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

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

We are currently recruiting for the following statistical position:

Survey Sampling Statistician

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

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



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Biostatistician Faculty Position

New Brunswick/Piscataway, NJ

The Biometrics Division of the Cancer Institute of New Jersey (CINJ) and the Department of Biostatistics at the University of Medicine and Dentistry of New Jersey School of Public Health (SPH), have an immediate need for a faculty Biostatistician. You will collaborate with biomedical and public health investigators for a wide range of important problems resulting from new experimental and observational paradigms. Specific responsibilities include:

- Developing statistical methodology and conducting collaborative research with other biomedical investigators
- Participating in the design and conducting statistical analyses of clinical trials, population studies, biomarker and tissue array data and other experiments in genomics and proteomics
- Supporting system biology and precision medicine research programs such as regularization techniques used for tackling high-dimension-low-sample-size problems
- Participating in educational activities at SPH

Qualifications:

- PhD in Statistics or Biostatistics, or equivalent
- Strong training and records in modern multivariate statistics methods, bio-computing (SAS and/or R)
- Experience in cancer genetics collaborative research and studies
- Excellent oral and written communication skills
- Interest in academic research, teaching, and consulting environment

Preference will be given to appointments at the Assistant or Associate Professor level. Applications from more senior biometricians will also be considered.

We offer modern computer and research facilities to support research in biomarker, translational studies, clinical trials, genomics, proteomics, NGS technologies, and related areas. Cooperative educational and research programs exist with neighboring academic institutions and affiliated Centers of Excellence. Additional information on UMDNJ is available on the University's web site <http://www.umdj.edu>.

For consideration, please send CV, a statement of research interests and 3 reference letters to: **Professor Weichung J. Shih, Chair, Department of Biostatistics, UMDNJ-School of Public Health, and Director of Biometrics, Cancer Institute of New Jersey, Rm 5007, 120 Little Albany St., New Brunswick, NJ 08901.** The UMDNJ is an Affirmative Action/Equal Opportunity Employer M/F/D/V and a member of the University Health System of New Jersey.

PA, or Raritan, NJ, facility. This individual will be responsible for identifying opportunities to utilize innovative designs and statistical analysis methods in drug development. EOE.

Wisconsin

■ Position in statistical/computational genetics available at the Medical College of WI, Milwaukee. Principal duties of this position include running statistical analysis of genetic data arising from a study of diabetes on a population of outbred rats. This NIH-funded position comprises use of statistical analyses and software developed specifically for use in highly recombinant animals. Visit www.mcw.edu/careers and complete an online application for requisition #20002565. EOE. ■

University of California Department of Statistics Assistant/Associate Professor in Statistics

Applications and nominations are invited for the tenure-track position of Assistant/Associate Professor of Statistics in the Department of Statistics at the University of California, Riverside.

The position targets candidates with high quality research and strong teaching records, and general training in statistics or biostatistics with expertise preferably in more than one of the following areas: Statistical Methodology for Clinical Trials, Survival Analysis, Discrete Data Analysis, Large Scale Data Analysis, Nonparametric Statistics, Image Analysis, and Spatial Statistics. Qualified candidates must have a Ph.D. in Statistics or Biostatistics or a similar statistically oriented discipline. The position is effective July 1, 2013.

The University of California at Riverside has started a new Medical School with its first incoming class of students expected in the Fall of 2013. The Department of Statistics will be part of an exceptional environment for interdisciplinary research with the new Medical School and other health related initiatives on campus. Candidates with a research profile for developing theory and methods of statistics that are motivated by biomedical collaborations are highly desirable.

Reviews for the position begin immediately, and will continue until the position is filled. Interested applicants should send a letter describing how their qualifications and interests would fit with the position description along with their curriculum vitae to the search committee chair:

Tiffany Lindsey
2317A Webber Hall • University of California • 900 University Avenue
Riverside, CA 92521-0138, USA
Tiffany.lindsey@ucr.edu

Applicants should arrange for three letters of recommendation to be sent to Tiffany as well. Until the file is complete with the requested information, the application cannot be given full consideration.

The University of California is an Affirmative Action/Equal Opportunity Employer. Members of underrepresented groups are particularly encouraged to apply. http://affirmativeaction.ucr.edu/forms/eeo_survey.html
The University has family-friendly policies and is committed to accommodating the needs of dual career couples.



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Open Rank Tenure-Eligible Faculty Position Department of Biostatistics • Position #F34450

The Department of Biostatistics at Virginia Commonwealth University (VCU) is seeking to fill a tenured/tenure-eligible faculty position at the level of assistant, associate, or full professor. We are seeking applicants with training and research interest in the design and statistical analysis of high-throughput genomic data (e.g., next generation sequencing, microarray, proteomic technologies), bioinformatics, computational biology, or closely related area. Additionally, applicants should have collaborative research experience. Primary responsibilities include teaching and advising graduate students as well as conducting independent methodological research. In addition, the successful applicant will be expected to collaborate with other VCU investigators in related fields in obtaining extramural grant support.

The Department of Biostatistics has a 40+ year history in the VCU School of Medicine and is committed to excellence in both biostatistical research and graduate education. The department offers both M.S. and Ph.D. programs in Biostatistics, including a concentration in Genomic Biostatistics, a M.S. in Clinical Research in Biostatistics, and a Master of Public Health. Our biostatistics faculty, students, and staff collaborate with clinical investigators on the Medical College of Virginia Campus (which includes the Schools of Medicine, Dentistry, Pharmacy, Nursing, and Allied Health) in a wide variety of biomedical research projects. Located in Richmond, Virginia, VCU has established relationships with the Virginia Department of Health as well as local and regional health departments.

Qualifications: For all levels, candidates should have a Ph.D. in biostatistics, statistics or related field, demonstrated experience in the analyses of high-throughput genomic or proteomic data, familiarity with statistical programming environments for analyzing such data, and excellent oral and written communication skills.

By Level of Appointment:

Full Professor: Applicants should have an established track record publishing in peer-reviewed journals, have national or international prominence in their area of expertise, and have demonstrated experience obtaining extramural research support.

Associate Professor: Applicants should have an established track record publishing in peer-reviewed journals and have demonstrated experience obtaining extramural research support.

Assistant Professor: Applicants should have at least two years of experience beyond completion of their degree program and must demonstrate excellent oral and written communication skills.

All candidates should have demonstrated experience working in and fostering a diverse faculty, staff, and student environment or commitment to do so as a faculty member at VCU. Potential candidates can submit applications, including a statement of research, teaching philosophy, curriculum vitae and contact information for three professional references, via mail – to Yvonne Hargrove, Department of Biostatistics, Virginia Commonwealth University, P.O. Box 980032, Richmond, VA 23298-0032 – or by e-mail to yfhargro@vcu.edu.

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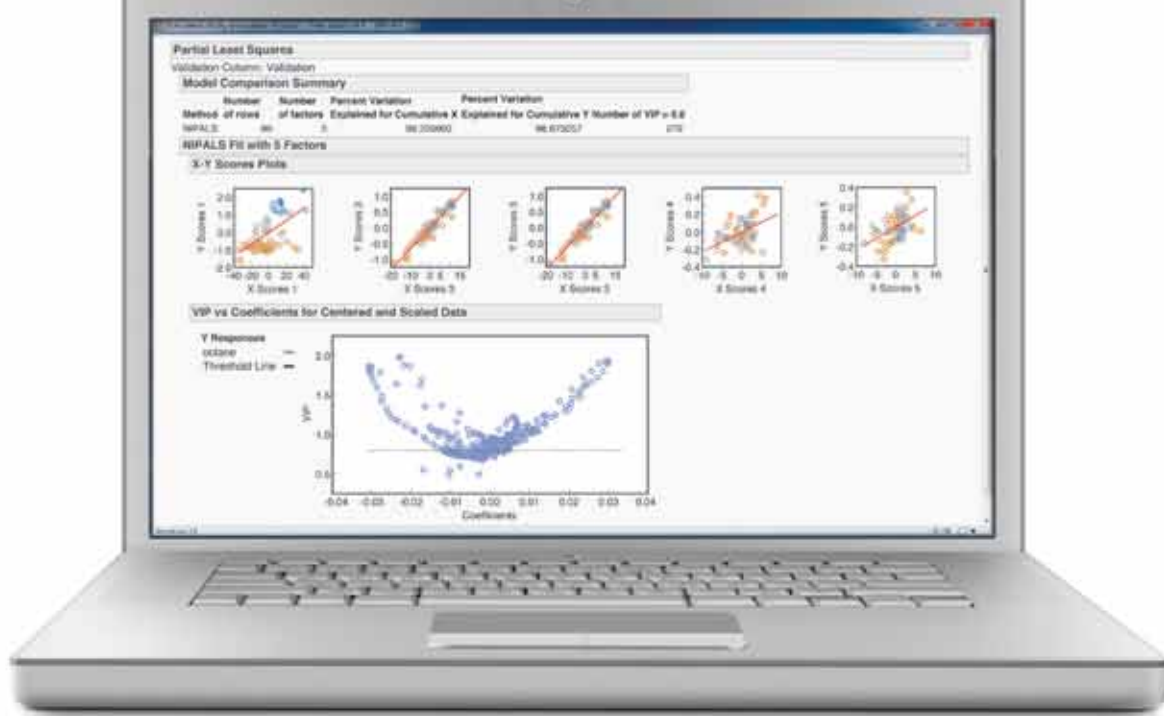
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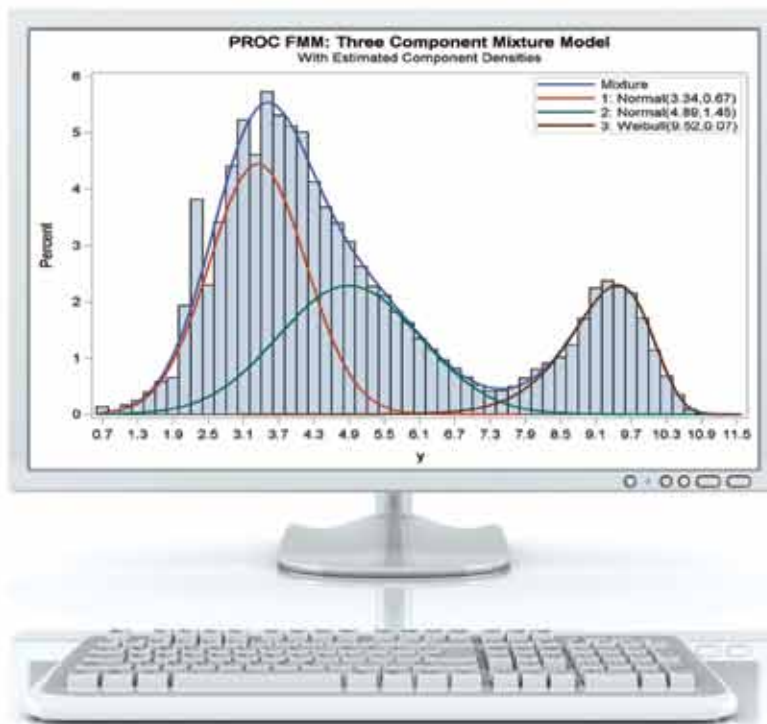
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