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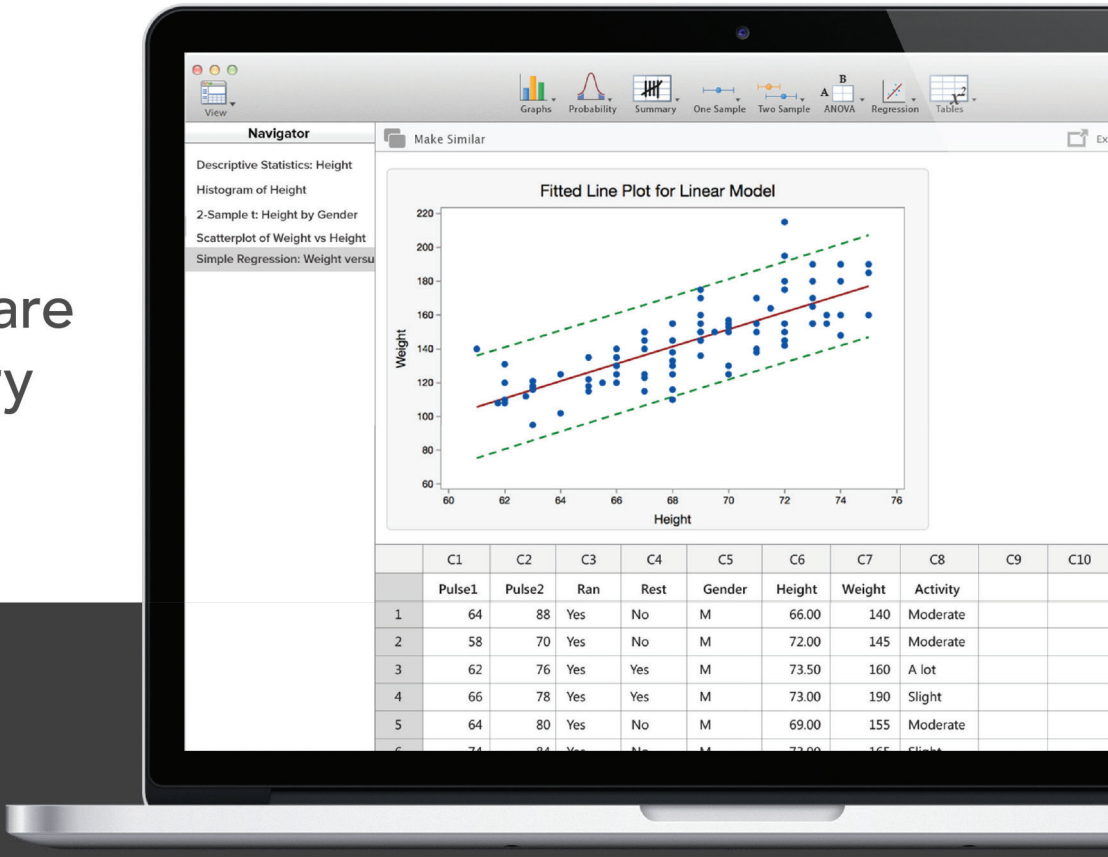

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	Pulse1	Pulse2	Ran	Rest	Gender	Height	Weight	Activity		
1	64	88	Yes	No	M	66.00	140	Moderate		
2	58	70	Yes	No	M	72.00	145	Moderate		
3	62	76	Yes	Yes	M	73.50	160	A lot		
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AMSTATNEWS

AUGUST 2015 • ISSUE #458

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

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Management Tips from Reyna—My Cleaning Lady

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

Otto

Contributing Editor

Mark Otto is a statistician working on projects involving migratory birds for the U.S. Fish and Wildlife Service at Patuxent Wildlife Research Refuge in Maryland. (Yes, a refuge for research.) He earned his master's in statistics at North Carolina State University before spending 30 years working as a statistician, starting at the U.S. Census Bureau.

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Discussing Data Science

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

Letamendi

Contributing Editor

Carl Letamendi (Dr. L) is the data scientist at an NYC-based primary education charter school management organization. He earned his PhD in conflict analysis/social science and holds an MBA in finance. To drop him a note, he may be reached at letamend@nova.edu.

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online article

The following article can be found online at *http://magazine.amstat.org*.

Argentine Mathematician Cleared on Charges of Publishing Alternative Price Indexes

The long ordeal of Graciela Bevacqua and her colleagues with the Argentine government is nearing an end. She learned this month that a judge ruled in her favor in the criminal trial. In 2013, she learned a civil fine was revoked. One fine remains to be settled.

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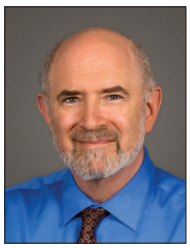
Women in Statistics



David Morganstein

A number of recent news articles (*http://wapo.st/1v5EtlG*) have described the relatively high levels of involvement by women in our profession, a level notably higher than other STEM areas. Editorials suggest this success is showing the way for others (*http://bit.ly/1K1PL7v*). The percentage of faculty in statistics departments that are women is higher than math, science, or engineering. The percentage of statistics degrees granted to women, likewise, is larger.

Francine Knowles of the *Chicago-Sun Times* wrote, "Data scientists are among Glassdoor's 2015 top 10 hottest professions. The career requires a love of statistics, which women have found attractive." (*http://bit.ly/1RurdYL*)

Journalists have contacted the ASA to explore this issue, and some of them asked me to discuss it with them. Their most common question was, "Why?"

While I have my own views, it seemed best to ask a panel of female colleagues (see The Panel, next page) so I could refer to their particular experiences should journalists raise this issue in the future.

I asked these colleagues three questions: Why they decided on statistics as a career, why they thought other women chose it as a career, and how the ASA can make its community more welcoming to women and minorities. The following are their responses.

Why did you decide on statistics as your profession?

Almost all replied that they recognized they were good in math. Some realized they could do a double major to include statistics with only a few additional courses.

Marie Davidian: There was a statistics class (taught out of Box, Hunter, and Hunter) offered by Dave Harrington, who was a brand new assistant professor. I absolutely loved it, and that was that!

Sylvia Dohrmann: From the auditorium balcony of the statistics course, I learned that statistics was a practical application of math that made *sense* and seemed to apply to a variety of fields. I changed my major before the semester was over.

Mary Kwasny: I was a math major. To some extent, I felt I had to prove myself (no pun intended), in my first few classes. While I liked that challenge as a college freshman, looking back, it wasn't right; had I not been stubborn and competitive, I may have changed majors. … Statistics can be used in so many fields.

Cyndy Long: I knew nothing about statistics as a science or career, but the adviser I met with pointed out that I could easily double major in it, so I did. I was fortunate to be offered a semester-long internship in the department of biostatistics at the Mayo Clinic. That is what hooked me!

Wendy Lou: I also enjoy collaborating with experts in diverse fields and like to study ideas from other disciplines. I pursued a career in academia so that I can continue to learn and be involved in interesting research projects, while passing on my knowledge through teaching.

Sally Morton: Because I wanted to have an impact on problems that mattered to me like those in health and education, and I thought I would do best in a career in which interdisciplinary communication was valued.

Jeri Mulrow: I did not like my first statistics course and promptly sold back my introductory statistics textbook! Fortunately, I continued on to take regression analysis, analysis of variance, and design of experiments. I was hooked.

Anna Nevius: I liked math, but wanted something not so abstract. Statistics provided that for me.

Jessica Utts: I noticed that I could do a double major by adding just six additional courses, so that's what I did. The only course that overlapped the two majors was the statistics course in the psych department—there were no stat courses in the math department back then—so I decided to go to graduate school in statistics.

Why do you think other women choose statistics as their profession?

A common theme in their replies was that women enjoyed collaborative work and wanted a career that could improve lives.

Marie Davidian: The opportunity to put skills to work in, for example, health sciences research, where the goal is to find better treatments and improve lives, seems to be compelling to many women.

OTHER PERSPECTIVES

You can find valuable and interesting perspectives from others as well, particularly in two articles that appeared in *CHANCE*.

In **"Two Perspectives on Celebrating Women in Statistics,"** Jane Harvill provides the perspective of a professor and Kristen Tecson provides that of a student *(http://chance.amstat.org/2014/11/perspectives)*.

In **"Know Your Power: A Panel Discussion by Past and Future ASA Presidents,"** a discussion is summarized between female ASA presidents who served as panelists at the first Women in Statistics conference (*http://chance.amstat.org/2014/11/panel-discussion*).

Sylvia Dohrmann: They were good in math, decided on a math-related major in college, and then found themselves in a core-level statistics course that simply made sense.

Mary Kwasny: Women are more likely to work together. Many women tend to be problem-finders and problem-solvers.

Cyndy Long: I think many of my female peers in graduate school (1) saw that there were many job opportunities in industry and (2) felt that they would be able to create better career flexibility facilitating the ability to balance a career with having children than in many other career paths.

Wendy Lou: They enjoy interacting with people in other fields, and that they can contribute to a variety of interesting research problems.

Sally Morton: A strong "sisterhood" of senior women, both historically (Gertrude Cox!) and currently (many women mentors) who formed a strong bond across the generations. Statistics is a very welcoming and generous profession—for and by both women and men.

Jeri Mulrow: They like to solve puzzles or problems, work in teams, and produce results. The statistics profession allows us to do just those things. We have the opportunity to collaborate with many different types of researchers in a variety of fields. We work on interesting and challenging problems, and we see the results of our work.

Anna Nevius: I also think that, along the way, the Caucus for Women in Statistics provided mentoring for many women.

Jessica Utts: My guess is that women are more likely than men to be particularly attracted to majors that have a human component. So women who excel in math see statistics as the most attractive option.

What can the ASA do to make our community even more welcoming to women and minorities?

Several women commented on the gender of the speakers at the plenary sessions, whose faces appear in the program, and the gender of the award winners. More mentoring was suggested, as well as the use of ambassadors to reach out to public schools, undergrad programs, and nations in which women less frequently are found in math and stat programs.

The Panel

Marie Davidian
Former ASA president; William Neal Reynolds Distinguished Professor of Statistics, Department of Statistics, North Carolina State University

Sylvia Dohrmann
Steering committee chair for the 2015 Conference on Statistical Practice; senior statistician, Westat

Mary Kwasny
Council of Chapters–ASA board representative; associate professor in preventive medicine-biostatistics, Northwestern University Feinberg School of Medicine

Marie Davidian: If there were more women and minority award winners, more plenary speakers who are women/minorities, that would make the ASA more attractive to these groups. Journals are another visible item. My impression (having not looked at the data, so I could be reflecting the popular impression out there) is that editorships have been a bit male dominated across all statistics journals, and certainly there has been a dearth of minorities.

Sylvia Dohrmann: I didn't get a lot out of my membership until I joined Westat and saw how my peers and supervisors valued the organization and participation in it. Perhaps we should be considering more peer-to-peer and employer promotion of the association (not just employers of large numbers of statisticians).

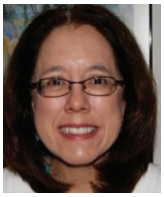
Mary Kwasny: I think there does need to be more awareness at JSM. Many of the keynote speakers are male. And those headshots are everywhere. Perhaps more high-school and college statistical awareness camps would be something?

Cyndy Long: The best thing the ASA can do is directly related to the mentoring program initiatives currently underway: facilitate women (or minorities) to find mentors who are women

Cyndy Long
Council of Sections–ASA board representative; professor and director of research, Palmer College of Chiropractic; director, Office of Data Management & Biostatistics, Palmer Center for Chiropractic Research

Wendy Lou
Council of Chapters–ASA board representative; professor of biostatistics and statistics, school of public health, University of Toronto

Sally Morton
Former ASA president; professor and chair, biostatistics, University of Pittsburgh



Jeri Mulrow
ASA vice president; deputy division director, National Center for Science and Engineering Statistics, National Science Foundation

Anna Nevius
Council of Sections–ASA board representative; Food and Drug Administration (retired)

Jessica Utts
ASA president-elect; chair, department of statistics, University of California, Irvine

(or minorities). I really love the This is Statistics campaign and think it will make a lot of difference to girls contemplating their future!

Wendy Lou: Send female or minority ambassadors to high schools to inspire students to become statisticians. Such ambassadors could also travel internationally to countries where women face greater discrimination. For graduate students in statistics-related fields, the ASA could host roundtable discussions during which ambassadors could share with students relevant experiences regarding women and minorities.

Sally Morton: We have to welcome and embrace diversity, not only because it's the right thing to do, but also because our future depends on it. Take notice of the paucity of women receiving the top awards, continue to take stock of statistics like women on committees, and improve outreach. Basically, the profession needs to stand up and be counted. Continue to put the goal of diversity, on both gender and race grounds, front and center in the strategic plan, presidential initiatives, etc.

Jeri Mulrow: More formal, smaller networking opportunities across the country, both within academic departments and within local chapters, with the specific goal of reaching out to women and minorities and asking them to participate, spreading the mentoring program around.

Anna Nevius: Invited talks at the Joint Statistical Meetings. Of the 10 featured speakers and lecturers, only one is a woman.

As an association and a profession, we've come a long way since 1944, when Helen Walker became the first female president of the ASA. We have taken many positive and supportive steps to be open and welcoming to all statisticians and statistical researchers—regardless of gender, race, or sexual orientation—and it's a journey that needs to continue.

I'll give the last word to Erica Groshen, commissioner of the Bureau of Labor Statistics, who wrote, "We … strongly believe that guiding more women into careers in science and math is essential. It's good for women and their families because there are so many new, exciting, and rewarding opportunities in this field. And our whole economy will benefit as more talented women participate fully in these innovative activities." (*http://1.usa.gov/1HXZDP9*)

David Morganstein

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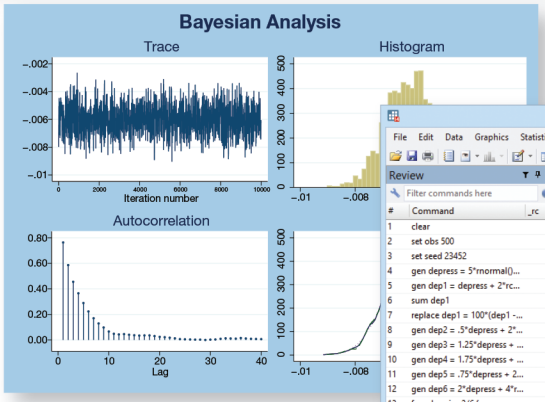

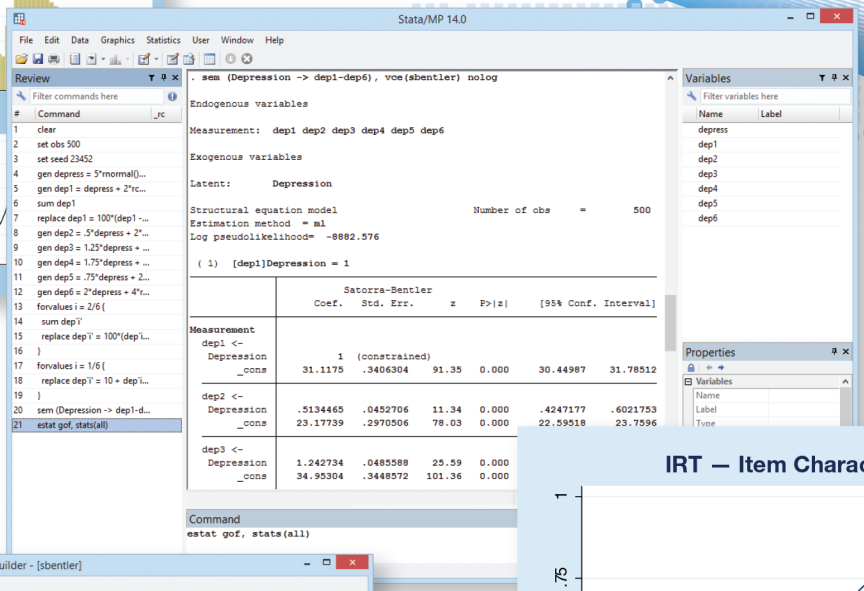

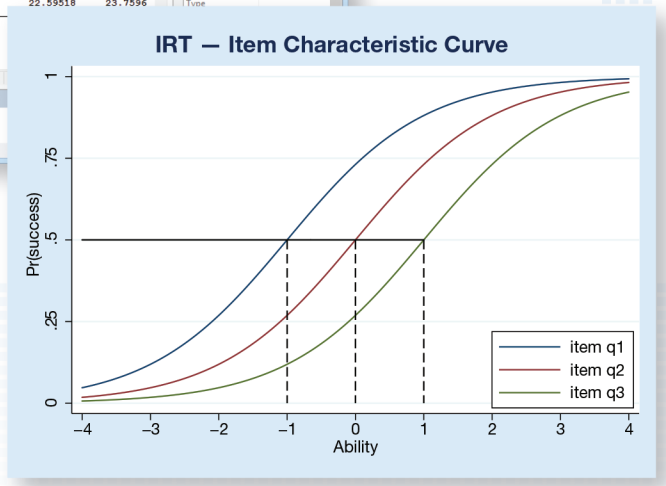

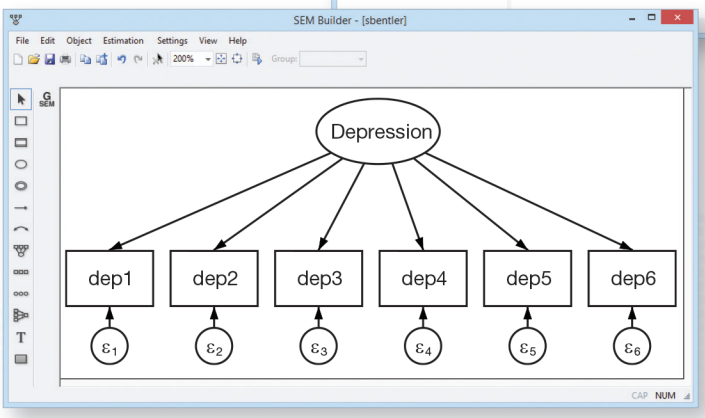

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ASA LEADERS REMINISCE

Sastry Pantula

In the eighth installment of the Amstat News *series of interviews with ASA presidents and executive directors, we feature a discussion with 2010 President Sastry Pantula.*

Jim Cochran

Q Sastry, thank you for taking time for this interview. When you began your undergraduate studies, was statistics your first choice for a major? If so, what motivated you to choose a statistics major at that point in your studies? Have you been happy with the choices you made?

A "It was an acquired taste … my dad gave it to me!"

In our high-school days, immediately after the 10th grade, we needed to decide whether to go in the mathematical and physical sciences (MPC) direction, biological sciences direction (BiPC), or humanities and economic sciences direction (HEC). Professions that were encouraged heavily at that time included an engineer, a medical doctor, or a businessperson. Depending on your choice of future profession, you chose MPC, BiPC, or HEC as your specialization for 11th and 12th grades.

I chose MPC, thinking that I would be an engineer. During 12th grade, we took various entrance exams to enter engineering colleges such as the Indian Institute of Technology (IIT). In 1974, in addition to the engineering exams, I took an entrance exam for the Indian Statistical Institute (ISI) because my father was a mathematics teacher and one of his former students, Professor Hanurav, who was the dean of studies at ISI, talked to him about the benefits of going to ISI. These entrance exams are taken by 12th-graders from all over India. I recall gaining admission and getting mentally ready to study mechanical engineering at an engineering college. Then, I got a telegram from ISI saying, "You have been selected for an interview. Come prepared to stay if selected." ISI was late in its selection process that year. About 100 students from all over India who did well on their entrance exam were interviewed, and after the in-person interviews, about 25–30 students were selected to attend ISI. I was fortunate to be one of the lucky ones selected to stay!

But I still had to decide whether I should go back and pursue mechanical engineering or stay there and study statistics. My father convinced me that I would have a better future in statistics than in engineering, and the rest is history. I am grateful to my father for opening the doors to the exciting profession of statistics.

A side story: After I became a full professor at NC State, my father did confess that he wasn't sure whether he could financially support me to go to an engineering college on his salary in 1974.

Sastry G. Pantula is dean of the college of science and a professor of statistics at Oregon State University, where he has served since 2013. Sastry joined OSU after serving as the director of the Division of Mathematical Sciences at the National Science Foundation from 2010–2013. Prior to that, he was a member of North Carolina State University's (NCSU) Department of Statistics, where he started as an assistant professor in 1982 immediately after earning his PhD from Iowa State University. At NCSU, Sastry also served as the director of graduate programs from 1994–2002 and head of the department of statistics from 2002–2010.

Sastry is a fellow of both the ASA and the AAAS; a member of the Phi Kappa Phi, Sigma Xi, and Mu Sigma Rho honor societies; and a member of the NCSU Academy of Outstanding Teachers. He earned his BStat (Honors) and MStat from the Indian Statistical Institute in Kolkata, India.

I had five siblings, all going to college, and my oldest brother was already studying at an engineering college to be an electrical engineer. It wasn't cheap to pay for room and board and other expenses for him. My other older brother and an older sister were in college at that time, as well. ISI, on the other hand, not only had no tuition charges, but it also paid us a stipend of Rs. 100 a month. And my hostel charges were only Rs. 10 a month. It was a great deal!

Q So fortune smiled on you when you were choosing between studying mechanical engineering and statistics?

A ISI is a great place to study statistics. Its motto is "Unity in Diversity." It not only gave us a strong foundation in applied and theoretical statistics, but it also exposed us to various biological, computational, and physical sciences. I received truly a π-lingual training—depth in statistics and probability, breadth across other sciences for communication and collaboration, and solid computational skills. I graduated with BStat (Honors) and MStat and joined another statistical Mecca—Iowa State University (ISU) in 1979. Wayne Fuller and other outstanding ISU faculty provided me an excellent, well-rounded training in statistics. My luck didn't stop there!

In 1982, I was fortunate to get an assistant professor job at NC State's department of statistics, which was founded by Ms. Gertrude Cox. The department, which has distinguished alumni like Stu Hunter among many others, was the birthplace of SAS and journals such as *Biometrics* and the *Journal of Statistics Education*. The statistics department has also appreciated interdisciplinary research since its origins. I had a wonderful time growing up in my professional career at NC State for 30 years—moving up the professorial and administrative ranks as the director of graduate programs and the head of the department of statistics. I loved my job, my students, my alumni, and my colleagues at NC State. As Ron Wasserstein would say, "If I get a penny for every time Sastry says 'NC State is one of the oldest, largest, and the best statistics departments in the country,' I will be a rich man."

So, I have been very lucky with 'my' choices in statistics, and as my wife, Sobha, and daughter, Asha, would say, "You better stick to budgets. We will call someone to fix that door knob." Clearly, I am no mechanical engineer!

Q Besides your theoretical work in time series analysis, are there any particular projects you worked on that were most interesting or challenging?

A The majority of my theoretical work focused on testing for nonstationarity of time series and on inference in nonlinear random coefficient models. Some projects I really enjoyed working on with my colleagues and others do not appear in journals. For example, I thoroughly enjoyed my sabbatical at a semiconductor consortium, SEMATECH, in Austin, Texas. I had an opportunity to work with many engineers on well-designed experiments related to the quality, reliability, and capability of thin wafers. I enjoyed developing and delivering one-day and three-day workshops on quality control, capability analysis, and experimental design throughout the country and in Mexico.

I also enjoyed working on classifying the dives of seals in Alaska, whether the dives are V-shaped, U-shaped, or bathtub-shaped. Each shape indicates their activity, and more importantly, indicates the location of fish where seals are prone to benthic eating. Similarly, I enjoyed my work with colleagues related to home-range estimation of animals and work on multi-frame estimation of population counts from combining various administrative records.

I have the highest regard for my colleagues John Rawlings and David Dickey, with whom I had the pleasure of collaborating on a book, *Applied Regression Analysis: A Research Tool* (2001). I am certainly grateful and lucky to have had such colleagues.

Q You served as director of the National Science Foundation's Division of Mathematical Sciences (DMS) from 2010–2013, a position for which you have a unique background. Had any other statistician(s) served in that role prior to you? What challenges did you face in this position because of your unique background?

A No, I don't think any other statistician has served in the role of the DMS director.

NSF is a wonderful place to work, and I highly recommend it. It is a myth to think that government workers are lazy and do not appreciate the proposals you submit. On the contrary, the program officers at DMS are very hard working and labor hard to stretch dollars to support outstanding research. It is an honor to work with folks at NSF. The main challenge

is the shrinking budget and increased demand for research dollars. There is certainly a significant amount of unfunded excellence and grants simply because there is not enough money to support all excellent research proposals.

As director of DMS, my challenge as a statistician was not much different from what a topologist or probabilist or applied mathematician would face in the same role. We are responsible for *all* of our programs, regardless of where our heart may be. Of course, it was challenging to see the number of statistics proposals growing at a faster rate than funding for the statistics program or DMS in general. Overall, this continues to be an issue, especially given that research is more and more computationally and data-enabled. Statistics program officers are also challenged and stretched to connect with every division at NSF in the same way that statisticians collaborate with all sciences, engineering, and education. Statistics research will continue to grow, and hopefully this will be reflected in the DMS budget.

Based on the growth of statistical sciences and departments of statistics during the past 50 years, I did initiate a proposal to change the name of DMS to the Division of Mathematical and Statistical Sciences, which was not successful. However, the proposal did generate much discussion among statistics communities and within NSF about the role of statistics and, more broadly, about data science. I enjoyed working with new programs at NSF such as the Computational and Data-Enabled Science in Mathematical and Statistical Sciences (CDS&E-MSS), Science Across Virtual Institutes (SAVI), and BIGDATA. I found it satisfying to recruit and work with diverse groups of program officers and staff.

Q You spent nearly 30 years as a faculty member with the statistics department at North Carolina State University (NCSU), during which time you were inducted into the NCSU Academy of Outstanding Teachers. You then moved into administrative roles, first with the NSF and then as dean of the Oregon State University College of Science. What motivated you to move from teaching into administration? What do you miss about teaching?

A Teaching is truly in my blood. 'Pantulu,' in my language, means teacher, and my last name, 'Pantula,' is derived from this word.

My father was a math teacher, my sister is a teacher, my maternal uncles and aunts are teachers, and my grandfathers were teachers and writers. My father used to wake me up at 4 a.m. to teach calculus to several of my friends and me in our living room. He loved to teach, and he literally taught me to love teaching. I used to tutor high-school kids when I was at ISI, and I volunteered to teach at ISU one summer. Seeing students understand new topics really excites me. So, I am certainly passionate about teaching and teaching as a profession.

Teaching is truly in my blood. 'Pantulu,' in my language, means teacher, and my last name, 'Pantula,' is derived from this word.

Even with reduced teaching loads in my administrative roles at NC State, I still was able to enjoy teaching students who were preparing for qualifiers or master's comprehensive exams. Some used to come to our house on weekends, and others used to meet me after hours in SAS Hall. My favorite subjects to teach are linear models, time series, and undergraduate probability and statistics for engineers. I have not had an opportunity to teach at Oregon State yet, but I did have an opportunity to read and discuss a book, *Numbersense*, with students from the university honors college.

First, the love of working with students and wanting to make an impact on increasing the quality, quantity, and diversity of students excited me to take on the role as director of graduate programs in 1994. I worked closely with the department head and a close friend of mine, Tom Gerig, and eventually added on the role of associate head. This piqued my interest in becoming a department head in 2002 in order to make even more of an impact by recruiting outstanding diverse faculty and making NC State's statistics department more recognized globally for its excellence and diversity.

I was very fortunate to have harmonious faculty and a supportive dean to help our faculty and students achieve many common goals.

Q It is plain to see that teaching really is in your blood. How have your professional activities allowed you to continue contributing to education?

A I was incredibly lucky when I was nominated for the 2010 ASA president position, and felt very honored when our members elected me to this office. It gave me a broad perspective of our incredible profession and the diversity of sectors the ASA represents. I appreciated the value and need to grow our membership, to show the impact of our profession, to be visible to policymakers, and to help educate and train future problem-solvers. GIVE to ASA was my theme—Growth, Impact, Visibility, and Education. I really enjoyed getting to know our members and seeing firsthand how dedicated they are to promoting the practice and profession of statistics.

Being the division director of DMS at NSF gave me broader exposure to other sciences, to engineering, and to education. This position also provided me with an invaluable opportunity to work with others to lead change at a national level. But as my tenure at NSF was ending, I considered seriously going back to teaching and research at NC State or George Washington University. I was evaluating myself, specifically where I could contribute the most and take advantage of the fortunate and wonderful experiences I had. Oregon State University (OSU) presented an extraordinary opportunity as dean of the college of science to move the dial AHEAD—Advancing Harmony, Excellence, And Diversity—three things that are close to my heart. People here are very humble, kind-hearted, and excellent in everything they do. Here at Oregon State, I am fortunate to have a fantastic administration and colleagues, a great network of alumni and supporters, and staff who like to see everyone succeed. We build leaders in science at OSU.

Like teaching, I realize that service to the profession, playing a small role in others' successes, and helping people reach their full potential is extremely gratifying. Ultimately, it is this selfish gratification in service that moved me into administration. I am fortunate, and I love it.

What I most miss about teaching is the interaction with students and the adrenaline rush I get being in front of a class.

Q What challenges do you feel the ASA and our discipline will confront in the near future?

A The ASA is a like a big tent, a very inclusive place. Members from various sectors and different backgrounds respect each other. The ASA proactively looks out for the health and best practices of the profession. Also, very importantly, it plays a role in policymaking for the country and in the development of the future workforce.

For all the things it does or plans on doing, the ASA will need to have a solid financial base. In addition to membership, publications, and meetings, it should enhance its fundraising activities. Our leadership, industry partners, and philanthropic organizations can continue to help the ASA achieve its goals. GIVE to ASA!

The ASA has successfully moved the profession away from the "we get no respect" attitude to a prominent place at the table, where we can add our voice to a national dialogue and inform important decisions. A good example is the work with AAAS and *Science* magazine. Statisticians are at the table! We need to deliver on our promise to build trust in science.

The ASA has incredible staff, but they may be spread too thin to keep an eye out for so many essential areas such as statistical agencies, teacher training, academic leadership, and the health of statistics departments in universities, as well as isolated statisticians.

As a discipline, we need to help diversify our workforce and pay attention to under-represented minorities. It requires efforts at all levels to be prepared for the changing demographics in the United States. Also, we need to be partners with other sciences to play a key role in Big Data and analytics. As data become ubiquitous, statistics becomes more and more relevant. For instance, precision agriculture, precision engineering, and precision medicine all need statistics. Whether we call it data science or statistical science, at the heart of it is fundamental statistics and good ethics. We cannot afford to have a blind spot in a computationally and data-enabled world. This means training future leaders in statistical science!

I remain very optimistic for our profession and for the ASA! I am incredibly honored and lucky to have the opportunity to serve.

Please return to this column next month, when we will feature an interview with 2004 ASA president, Bradley Efron. ■

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New Undergraduate Data Science Programs

The number of undergraduate statistics degrees has nearly doubled in the last four years—making it the fastest growing STEM degree—and master's degrees are also growing quickly. Further, the number of universities granting undergraduate statistics degrees has increased from 74 in 2003 to more than 110 last year.

Last month in *Amstat News*, we profiled five new undergraduate data science programs. Here are a few more.

University of Michigan

Kerby Shedden is professor of statistics at the University of Michigan, where he has been on the faculty since 1999. He has served as adviser and program director for the undergraduate programs in statistics, informatics, and data science. His research interests include genomics and statistical computing. He has also served as the director of the university's statistical consulting center since 2011.

Atul Prakash is a professor in the department of electrical engineering and computer science at the University of Michigan. He received a B.Tech. from IIT Delhi and a PhD from University of California, Berkeley. He was instrumental in the design of the new Data Science undergraduate program and is currently serving as the co-chair of the program committee for the new program.

Data Science

Website: *www.eecs.umich.edu/eecs/undergraduate/data-science*
http://lsa.umich.edu/stats/currentstudents/undergraduates/majordatascience.html

Year in which first students expected to graduate: 2015

Number of students currently enrolled: 20

Partnering departments: Computer Science and Statistics

How do you view the relationship between statistics and data science?

Our view is that, in the near future, most practicing statisticians will also be data scientists, and a large fraction of data scientists will also be considered to be statisticians.

There are fundamental ideas from statistics that every data scientist should master, including thinking rigorously about variation and uncertainty, representativeness and generalization, efficient data collection and analysis, and meaningful reduction and summarization of data. There are also certain parts of data science that are not very statistical in the traditional sense, such as the challenges of engineering computing systems to efficiently store, transmit, and support access to data. We feel that statisticians who do not understand how modern computing systems work will become increasingly disadvantaged as advanced computational and data management tools become more intertwined with statistical theory and practice.

Most importantly, the ultimate goal of data science is to use data to gain insight and make decisions relating to phenomena that occur in the "real world." Thus every data scientists should understand how data can be effectively analyzed and used to rigorously support insight and decision-making, which is traditionally the core emphasis of statistics.

Please describe the basic elements of your data science curriculum and how it was developed.

The foundation courses taken by our data science students in their first two years essentially encompass all the foundation courses that would be taken by either computer science or statistics majors. The courses include three semesters of calculus, linear algebra, programming (including data structures), and discrete mathematics. All data science students

at U-M take upper-division courses in machine learning, databases, probability and statistics, and regression modeling. In addition, students take technical electives (drawn mainly from advanced courses in computer science, mathematics, and statistics), electives in an application domain where data science techniques are used, and a capstone course.

The data science program was developed as an evolution of our slightly less technical major in informatics and data mining, which will ultimately be discontinued. The computer science department and the department of statistics have collaborated closely in these endeavors over a number of years.

We also hope to use the new data science major to innovate the courses we offer through the statistics department, so our "traditional" statistics majors will have more opportunities to take courses in emerging areas.

What was your primary motivation(s) for developing an undergraduate data science program? What's been the reaction from students so far?

We think the rapid emergence of data science provides a unique opportunity for our students to be part of what could become a major transformation in the worlds of academic research and business over the next decade and beyond. We also hope to use the new data science major to innovate the courses we offer through the statistics department, so our "traditional" statistics majors will have more opportunities to take courses in emerging areas. Finally, many of the faculty hired into our statistics department in the last 5–10 years have computer science PhDs or major research interests in areas related to data science. The data science program thus opens up new opportunities for undergraduates to engage in research with the statistics and computer science faculty and to gain skills that will open doors to research taking place throughout the university.

Students are quite excited and curious about the new program. They know that many of the tools they use in their personal lives are driven by data, and they are hearing a lot about the career opportunities for people with knowledge and skills in this area. A number of students have commented that they value the opportunity to combine several interests, rather than focusing exclusively on either statistics or computer science.

Describe the reception you received from the partnering departments, other departments, and those at the university who had to approve the program.

We have not had difficulty convincing our colleagues at the college and university levels that this new program is intellectually deep and that the field of data science has the staying power to constitute an undergraduate major in a college of arts and sciences.

Within both the statistics and computer science departments, there was discussion about the wisdom of opening another academic program given the growing popularity of our existing undergraduate and graduate programs. In the end, the faculties of both departments came to see that this is an important new direction for both disciplines and that the time to act is now.

What advice do you have for students considering a data science degree versus a computer science degree, a statistics degree, another degree, or some combination of the above (e.g., a double major of statistics and computer science)?

Many students are relieved to learn that the decision to major in statistics versus data science does not necessarily close doors to them. Both programs are rigorous and provide an opportunity to develop foundational knowledge and skills that can lead to a variety of career paths and graduate programs. In addition, the way our program is structured allows a student to wait to make a final decision until after taking a few courses that will count toward either program.

If a student in data science decides to develop their "traditional" statistics knowledge to a level similar to that of a statistics major, the main thing they are missing is a course in statistical theory, which can be taken as an elective. A double major in computer science and statistics is also an option, and might make sense for someone with interests in areas of computer science that are unrelated to data science.

Miami University

A. John Bailer is university distinguished professor and chair of the department of statistics at Miami University. He is one of the developers of the analytics co-major and the data visualization class that is a core class in the co-major.

L. Allison Jones-Farmer is the Van Andel Professor of Analytics in the Farmer School of Business at Miami University. She is the director of the newly formed Center for Analytics and Data Science and co-developed the analytics practicum.

Analytics Co-major

Website: *http://miamioh.edu/fsb/academics/isa/academics/majors/co-major/index.html*

Year in which first students expected to graduate: 2015 (11 graduated May 2015)

Number of students currently enrolled: 65 (53 in business analytics track + 12 in predictive analytics track)

Partnering departments: The analytics co-major is jointly offered by the department of statistics in the college of arts and sciences and the department of information systems and analytics in the Farmer School of Business at Miami University.

How do you view the relationship between statistics, data science, and analytics?

Statistics, data science, and analytics are all problem-solving methods used to turn data into information. The three areas use many of the same tools and techniques, but have emerged in different application domains with different emphases.

Statistics, the original science of data, encompasses data analysis with theoretical underpinnings such as study design, model development, and model evaluation. Data science involves solving complex, multifaceted problems by combining tools from mathematics, statistics, computer science, and information technology. The term "analytics" precedes the term "data science" as a buzzword and was originally coined to describe the use of data-driven decision-making in business and sports. Like data science, analytics problems are often multifaceted, relying on tools from mathematics, statistics, computer science, and information technology.

To be successful, applications of statistics, data science, and analytics all require the decision-maker(s) to have a deep understanding of the context or problem domain.

Please describe the basic elements of your data science/analytics curriculum and how it was developed.

The conception, design, and implementation of the analytics co-major were a partnership between the department of statistics in the college of arts and sciences and the department of information systems and analytics in the Farmer School of Business. The co-major was developed in recognition of the strengths of the two departments in the areas of data management, programming, statistics, and statistical learning that, when combined, could generate a ground-breaking opportunity for our students.

To attain a co-major, a student must complete as many hours in analytics as required for most full majors, but the student must also have another supporting major. This allows our students to develop domain knowledge in many areas (e.g., statistics, mathematics, marketing, computer science, finance, information technology, geography, journalism, etc.) while gaining critical data management and analysis skills.

The basic elements of our program are a set of core classes that address the following topics:

- Data description and summarization
- Data management – structured and unstructured
- Regression models
- Visualizing data and digital dashboards

There are multiple classes that meet each of these topics. Although many of these courses already existed, most have been completely revamped since the program's inception to meet the changing technology and skill requirements in industry. The data visualization class was a new course added to the

curriculum. It is worth noting that this class was developed by three departments (statistics, interactive media studies, and journalism) and has been team taught by a statistician and graphic designer each time it has been offered.

All of our major courses emphasize the use of real data provided by our university, community, or corporate partners. In their senior year, students have the option of taking a semester-long analytics practicum course in which they work with an external client to solve an analytics problem.

In addition to the core classes, students sign up for one of two tracks: business analytics (developed by the department of information systems and analytics) or predictive analytics (developed by the department of statistics). We are planning to expand the program to include new tracks. In particular, the department of geography is developing a geospatial analytics track that will include geographic information systems and related coursework. The department of computer science and software engineering is also developing a data science track that will emphasize more technical data-related programming and data architecture skills.

What was your primary motivation(s) for developing an undergraduate data science/analytics program? What's been the reaction from students so far?

Our motivation for developing the program was to provide students with skills to satisfy the needs of business, industry, and government. Student reaction has been very positive. We have gone from zero to 65 co-majors in less than two years and have already had 11 students graduate with the co-major. In addition, our analytics co-majors are highly recruited, with nearly all having multiple job offers by the fall of their senior year.

Describe the reception you received from the partnering departments, other departments, and those at the university who had to approve the program.

We were careful to build a unique program that complements, rather than cannibalizes, other majors. Thus, the reception has been overwhelmingly positive by the sponsoring departments, their respective divisions, and the campus community at large. To further our collaborative initiatives, we have received seed funding from the provost's office, the Farmer School of Business, the college of arts and sciences, and the college of engineering and computing to launch a new center for analytics and data science. In addition, we enjoy partnerships with several corporations.

The ability to clearly, correctly, and concisely display, write about, and talk about complex data-related problems is a key differentiator between an analyst who exclusively functions in a technical support role and an analytics or data science professional.

What advice do you have for students considering a data science/analytics degree versus a computer science degree, a statistics degree, another degree, or some combination of the above (e.g., a double major of statistics and computer science)?

We believe a combination of studies is ideal for preparing for a career in data science and analytics. Our program provides a unique opportunity to blend the data science/analytics studies with either more technical or managerial aspects of data-related careers. Statistics and data mining provide the foundation for evidence-based decision-making, designing studies, and building and validating models for prediction. Information systems and computer science provide the managerial and technical foundations for understanding the structure, processing, storage, and extraction of data.

The ability to clearly, correctly, and concisely display, write about, and talk about complex data-related problems is a key differentiator between an analyst who exclusively functions in a technical support role and an analytics or data science professional.

In addition, domain knowledge in areas such as biology, bioinformatics, marketing, finance, sports management, or other application areas will complement the student's data management, analysis, and communication skills.

Finally, hands-on experience in the form of an internships, practicum, data analysis competition, or project is very important.

The Ohio State University

Christopher Hans is an associate professor in the department of statistics at The Ohio State University and co-directs the university's undergraduate major in data analytics. His research focuses on Bayesian methodological development with an emphasis on statistical computing.

Srinivasan Parthasarathy is a full professor in computer science and engineering at The Ohio State University. He directs the data mining research lab and co-directs the undergraduate major in data analytics. He is well known for his work in data analytics, database systems, and bioinformatics and chairs the SIAM data mining steering committee.

BS with a major in data analytics

Website: *http://data-analytics.osu.edu*

Year in which first students expected to graduate: 2017

Number of students currently enrolled: 81

Partnering departments: The major is co-directed by the department of statistics (college of arts and sciences) and the department of computer science and engineering (college of engineering). The major has curricular partnerships with departments from the college of arts and sciences, the college of engineering, the college of medicine and the Fisher College of Business.

How do you view the relationship between statistics, data science, and analytics?

We view statistics and computer science as forming part of the foundation of data science and analytics. The practice of data analytics requires a large and complex skill set that draws on many disciplines, yet its core is built upon fundamental principles of statistics and computer science. Being a successful data scientist requires being able to solve problems in a variety of areas, and understanding the principles of statistics and computer science allows one to apply knowledge gained in one area of application to another.

Please describe the basic elements of your data science/analytics curriculum and how it was developed.

The major in data analytics leads to the BS degree in the college of arts and sciences and is structured to have four major components. Students obtaining this degree must satisfy the college's general education requirements, which help develop many of the "soft skills" employers of data scientists find attractive (e.g., communication and critical thinking skills and an appreciation of diverse and foreign cultures).

All students in the major complete core coursework in database design, data mining, software engineering, probability, linear algebra, statistical inference and decision-making, regression modeling, visualization, and optimization. Departments offering courses in the core include computer science and engineering, integrated systems engineering, mathematics, and statistics.

Students then choose a specialization in the major where they learn how to apply concepts learned in the core to problems in specific areas. Current options include business analytics, computational analytics, and biomedical informatics; a fourth specialization in social science analytics is under development.

Finally, in the experiential component, students integrate components of the general education curriculum with the core and specialization by working on problems supplied through partnerships with business and industry as part of a capstone project. This component may also be further enriched by targeted internships with industry. During these semester- or year-long courses, students work with faculty and specialists from external business and industry partners to formulate and implement approaches to solving contemporary data analytics challenges.

What was your primary motivation(s) for developing an undergraduate data science/analytics program? What's been the reaction from students so far?

Our primary motivation in developing the program was to construct a coherent curriculum that would prepare students to work in this exciting and growing area. While previously students could only piece together courses from various departments that would address particular aspects of analytics (with no guarantee of consistency of curricular structure), development of the major has provided an integrated approach to data analytics education that provides a natural and cohesive curricular path from start to finish. In fact, many of the courses in the major have been developed from scratch specifically for this program.

The student response has been overwhelming: More than 80 students had selected data analytics as their major plan by the end of the first year of

the program. The cohort is also particularly strong when measured by high-school and college performance and scores on standardized tests. Our most popular specialization is the business analytics specialization.

Describe the reception you received from the partnering departments, other departments, and those at the university who had to approve the program.

Our major is truly interdisciplinary and was developed from day one through partnerships between the college of arts and sciences, college of engineering, college of medicine, and Fisher College of Business. Many units across campus were excited to contribute to the major, and collaboration between faculty from these units was a key to its successful development. The university was extremely supportive of the development of the major and provided early and frequent feedback that helped smooth the approval process.

What advice do you have for students considering a data science/analytics degree versus a computer science degree, a statistics degree, another degree, or some combination of the above (e.g., a double major of statistics and computer science)?

As the details of programs vary from university to university, it is difficult to give general recommendations about which program might be right for you. We would recommend students choose programs that match most closely with their interests and career goals. At The Ohio State University, the data analytics major is ideal for students who are passionate about all aspects of working with and learning from data. One major difference between our data analytics major and other related majors at the university is the way in which the core of the major is integrated with a specialization and capstone experience to provide a comprehensive curriculum that prepares students to address real-world data challenges. ■

2015 Poster, Project Competitions Showcase Winners

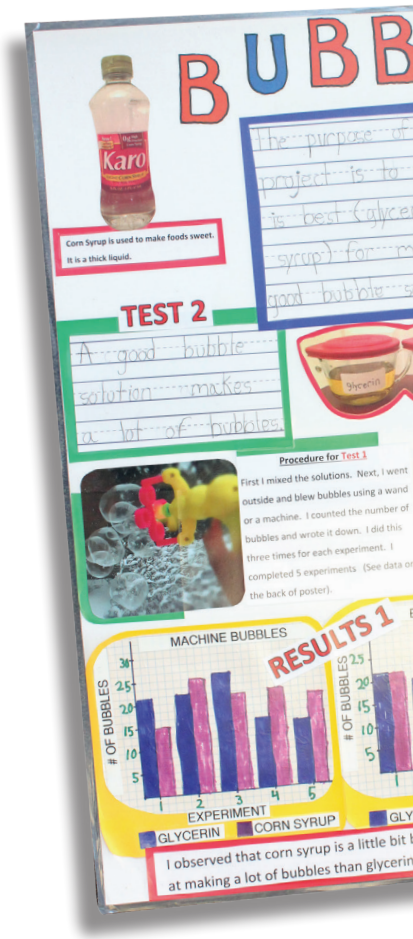
The American Statistical Association is pleased to announce the winners of the 2015 Poster Competition and Project Competition. First-place winners received $300, a plaque, a plaque for their school, and grade-appropriate graphing calculators provided by Texas Instruments. Second-place winners received $200 and a plaque; third-place winners received $100 and a plaque; and honorable mentions received plaques.

The poster and project competitions are directed by the ASA/NCTM Joint Committee on Curriculum in Statistics and Probability. The 2015 poster competition leader is Rodney Jee of Discover Financial Services. Daren Starnes of The Lawrenceville School is serving as the head project competition leader, with Nathan Kidwell of Dubuque Senior High School as associate project competition leader.

K–12 posters are due every year on April 1. Projects (written reports) for grades 7–12 are due every year on June 1. Visit the competitions web page at *www.amstat.org/education/posterprojects* for details—including previous winners, entry forms, instructional webinars, and the rubrics used for judging the posters and projects.

2015 National Project Competition Winners

Each year, the statistical project competition attracts a variety of submissions in which students from grades 7–12 conduct creative studies. It provides them with opportunities to apply all the statistical skills they have acquired throughout the school year to solve real-world problems of interest to them. Results of the project competition and a list of the judges can be found at *http://magazine.amstat.org*.



GET INVOLVED

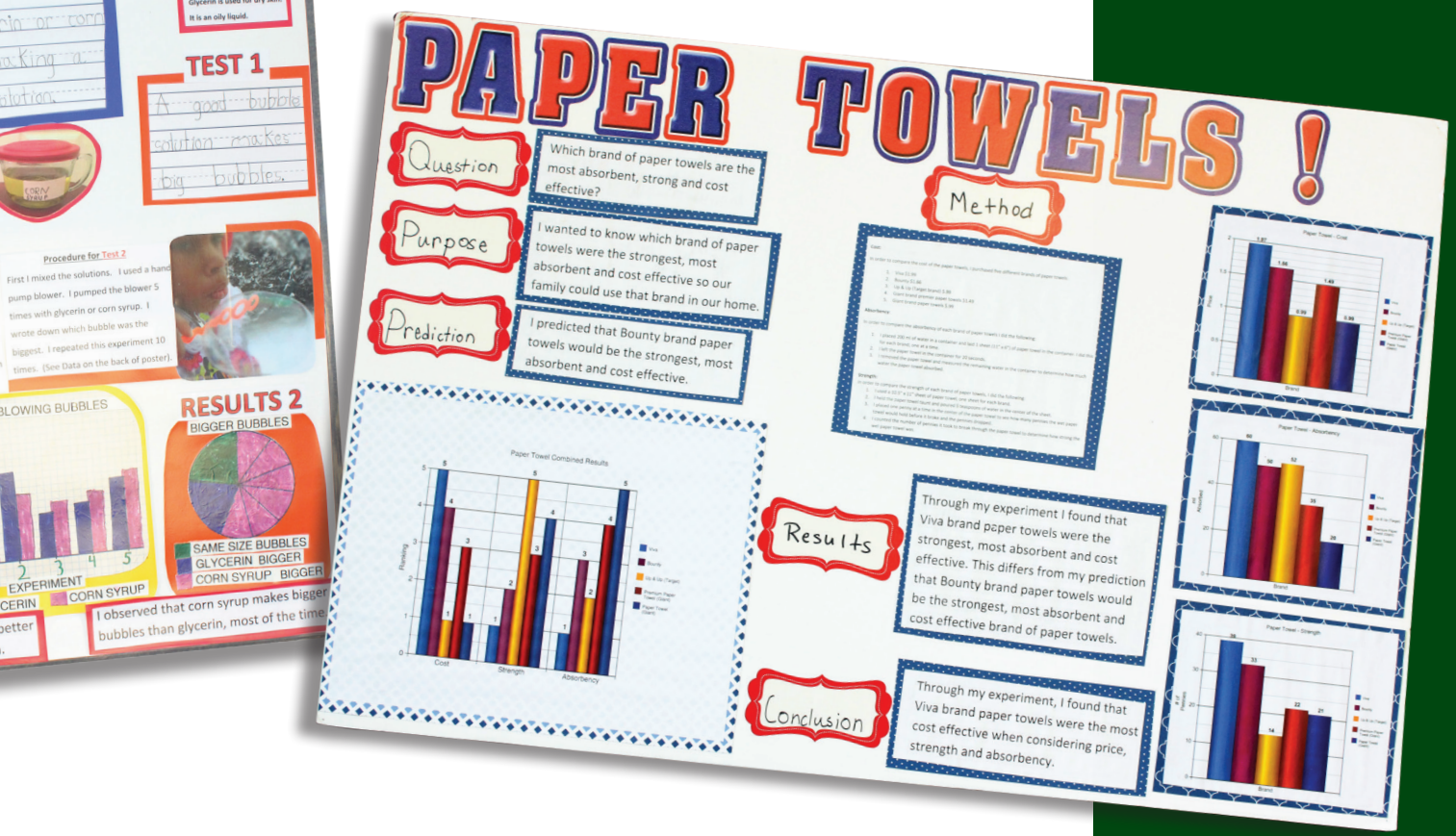
For information about how you can start a regional poster competition or mentor students in your area, see the article appearing in the July 2011 issue of *Amstat News* at *http://magazine.amstat.org/blog/2011/07/01/poster-comp-how-to*. You can download a flyer about the ASA poster and project competitions and other K–12 statistics education programs and resources to share with your local schools at the bottom of *www.amstat.org/education*. For additional information or questions regarding how to get involved in the poster or project competitions, please contact Rebecca Nichols at *rebecca@amstat.org*.

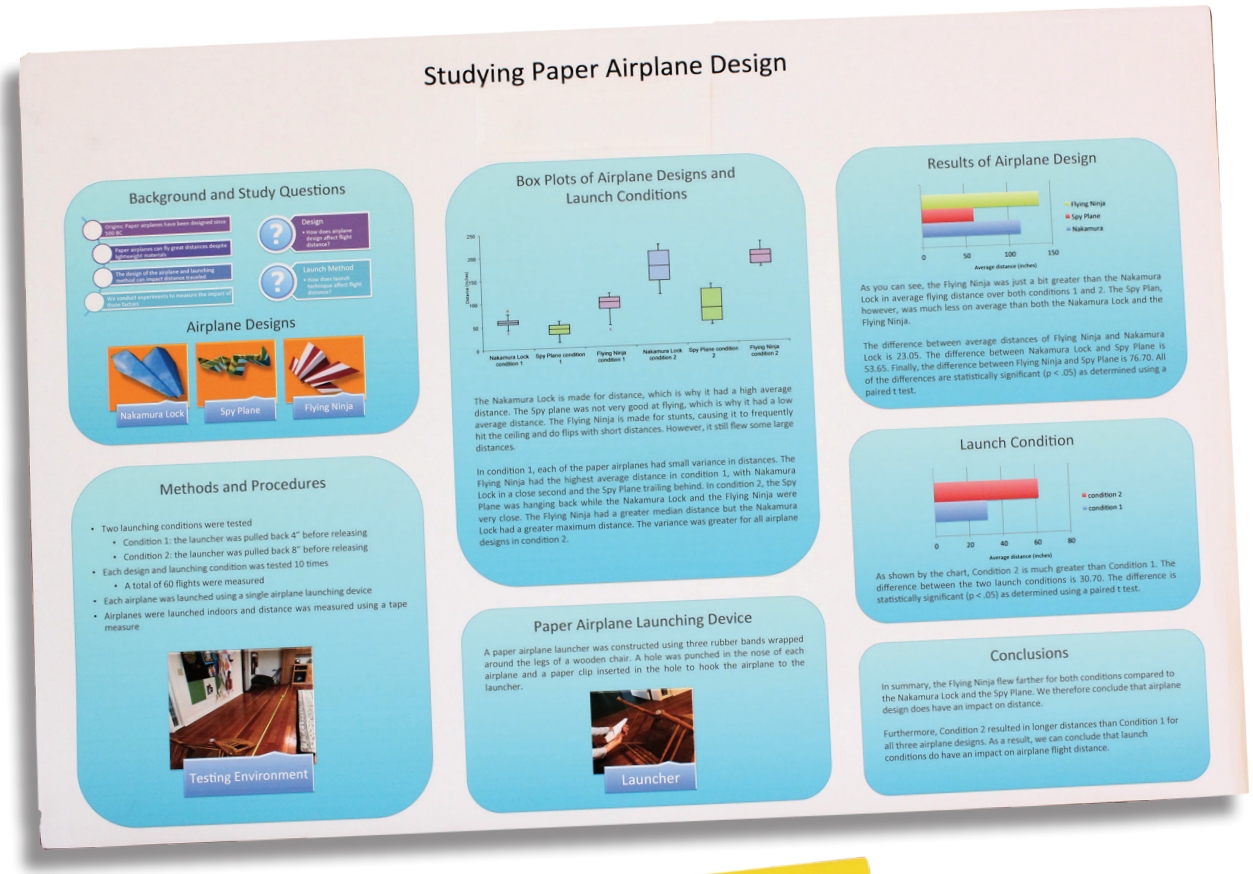
GRADES K–3

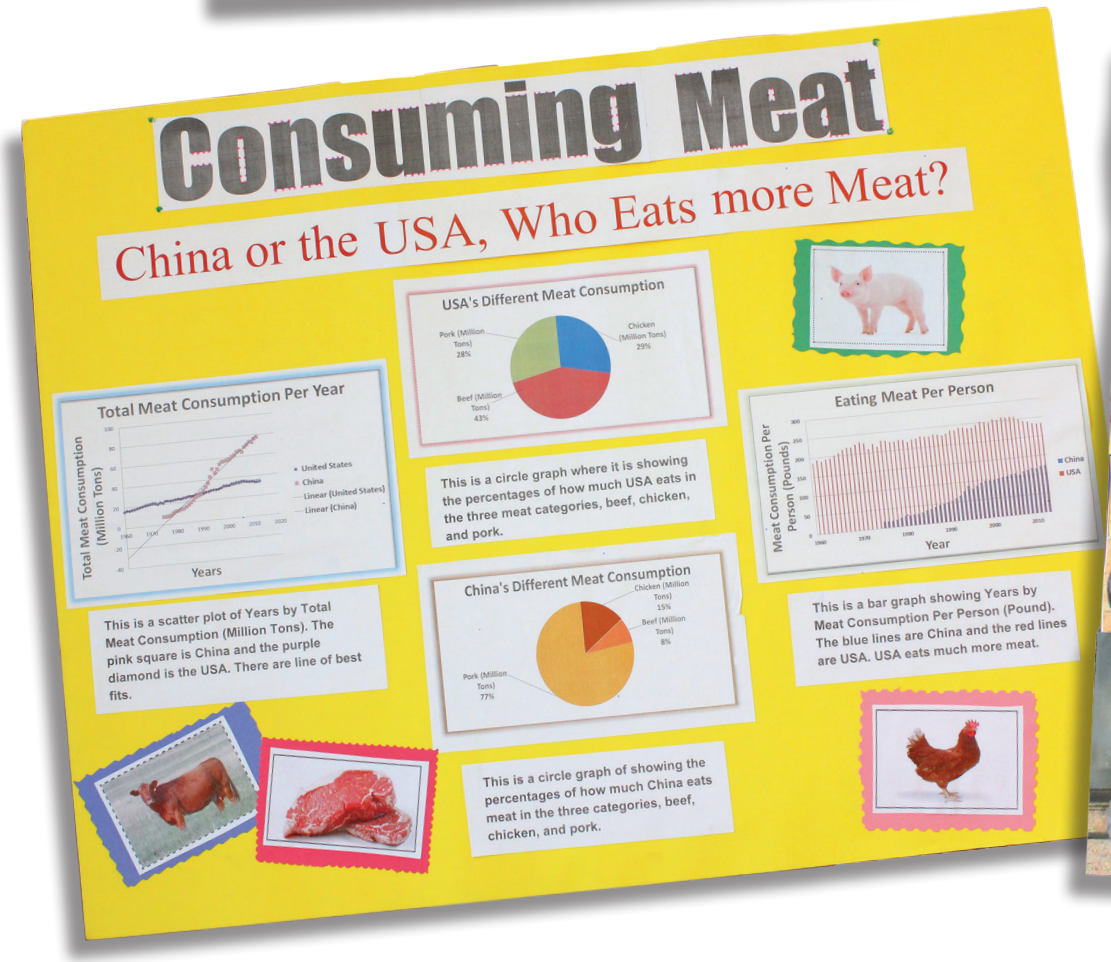
FIRST PLACE
Jacob Harleton
How Has Baseball Changed?
Pine Ridge Elementary
Grand Rapids, Michigan

SECOND PLACE
Uma Riggins
Bubbles
The Key School
Bowie, Maryland

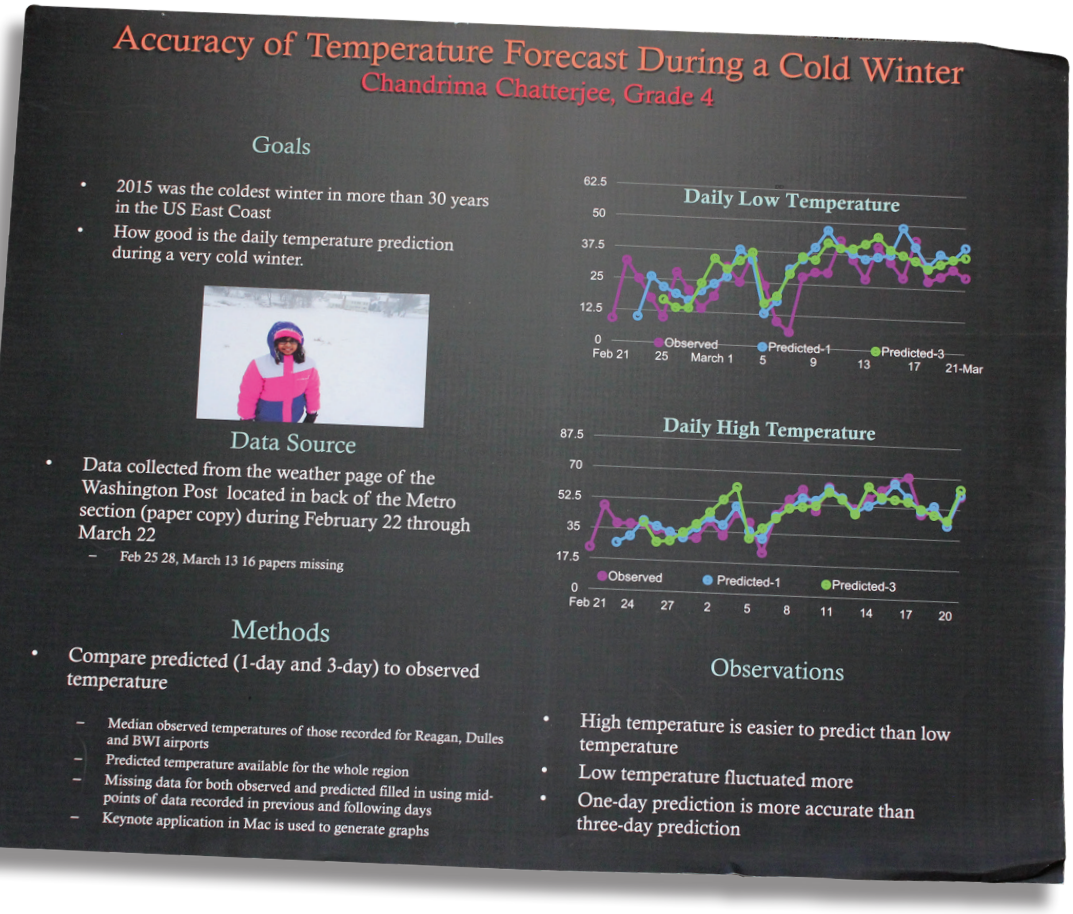
THIRD PLACE
Corey Tobin
Paper Towels!
Overlook Elementary
Abington, Pennsylvania

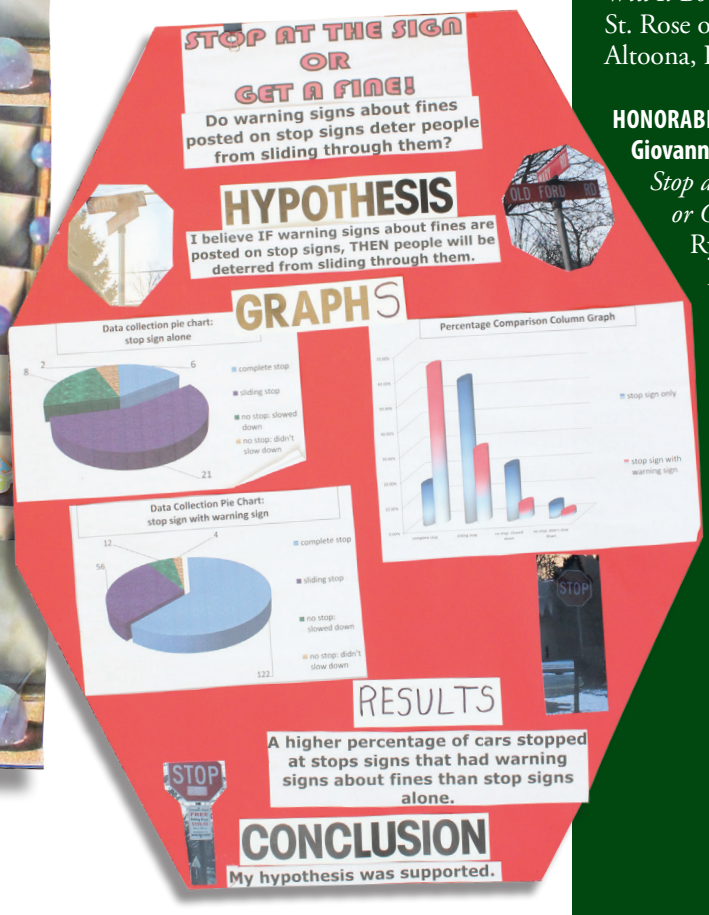



Studying Paper Airplane Design
Background and Study Questions
Design
Launch Method
Airplane Designs
Nakamura Lock
Spy Plane
Flying Ninja
Box Plots of Airplane Designs and Launch Conditions
The Nakamura Lock is made for distance, which is why it had a high average distance. The Spy plane was not very good at flying, which is why it had a low average distance. The Flying Ninja is made for stunts, causing it to frequently hit the ceiling and do flips with short distances. However, it still flew some large distances.
In condition 1, each of the paper airplanes had small variance in distances. The Flying Ninja had the highest average distance in condition 1, with Nakamura Lock in a close second and the Spy Plane trailing behind. In condition 2, the Spy Plane was hanging back while the Nakamura Lock and the Flying Ninja were very close. The Flying Ninja had a greater median distance but the Nakamura Lock had a greater maximum distance. The variance was greater for all airplane designs in condition 2.
Results of Airplane Design
As you can see, the Flying Ninja was just a bit greater than the Nakamura Lock in average flying distance over both conditions 1 and 2. The Spy Plan, however, was much less on average than both the Nakamura Lock and the Flying Ninja.
The difference between average distances of Flying Ninja and Nakamura Lock is 23.05. The difference between Nakamura Lock and Spy Plane is 53.65. Finally, the difference between Flying Ninja and Spy Plane is 76.70. All of the differences are statistically significant (p < .05) as determined using a paired t test.
Methods and Procedures
Two launching conditions were tested
Condition 1: the launcher was pulled back 4" before releasing
Condition 2: the launcher was pulled back 8" before releasing
Each design and launching condition was tested 10 times
A total of 60 flights were measured
Each airplane was launched using a single airplane launching device
Airplanes were launched indoors and distance was measured using a tape measure
Testing Environment
Paper Airplane Launching Device
A paper airplane launcher was constructed using three rubber bands wrapped around the legs of a wooden chair. A hole was punched in the nose of each airplane and a paper clip inserted in the hole to hook the airplane to the launcher.
Launcher
Launch Condition
As shown by the chart, Condition 2 is much greater than Condition 1. The difference between the two launch conditions is 30.70. The difference is statistically significant (p < .05) as determined using a paired t test.
Conclusions
In summary, the Flying Ninja flew farther for both conditions compared to the Nakamura Lock and the Spy Plane. We therefore conclude that airplane design does have an impact on distance.
Furthermore, Condition 2 resulted in longer distances than Condition 1 for all three airplane designs. As a result, we can conclude that launch conditions do have an impact on airplane flight distance.


Consuming Meat
China or the USA, Who Eats more Meat?
USA's Different Meat Consumption
Pork (Million Tons) 28%
Chicken (Million Tons) 29%
Beef (Million Tons) 43%
This is a circle graph where it is showing the percentages of how much USA eats in the three meat categories, beef, chicken, and pork.
Total Meat Consumption Per Year
Total Meat Consumption (Million Tons)
Years
United States
China
Linear (United States)
Linear (China)
This is a scatter plot of Years by Total Meat Consumption (Million Tons). The pink square is China and the purple diamond is the USA. There are line of best fits.
Eating Meat Per Person
Meat Consumption Per Person (Pounds)
Year
China
USA
This is a bar graph showing Years by Meat Consumption Per Person (Pound). The blue lines are China and the red lines are USA. USA eats much more meat.
China's Different Meat Consumption
Chicken (Million Tons) 15%
Beef (Million Tons) 8%
Pork (Million Tons) 77%
This is a circle graph of showing the percentages of how much China eats meat in the three categories, beef, chicken, and pork.


will it
EXPERIMENTS
Hypothesis: I believe that ice will produce the highest bounce.
Objective: Learn what surface will produce the highest bo
hard rubber ball.
SCIENCE Fair
Surface
Bounce in Inches
Trial #1
Trial #2
Trial #3
Ice 16 18 20
tub/water 2 inches 6 8 9
tub/no water 20 22 30
rug 2 6 4
wooden floor 19 20 21





GRADES 4–6

FIRST PLACE
Ryan Holder
Best Paper Airplane Design
Jefferson Elementary
Pullman, Washington

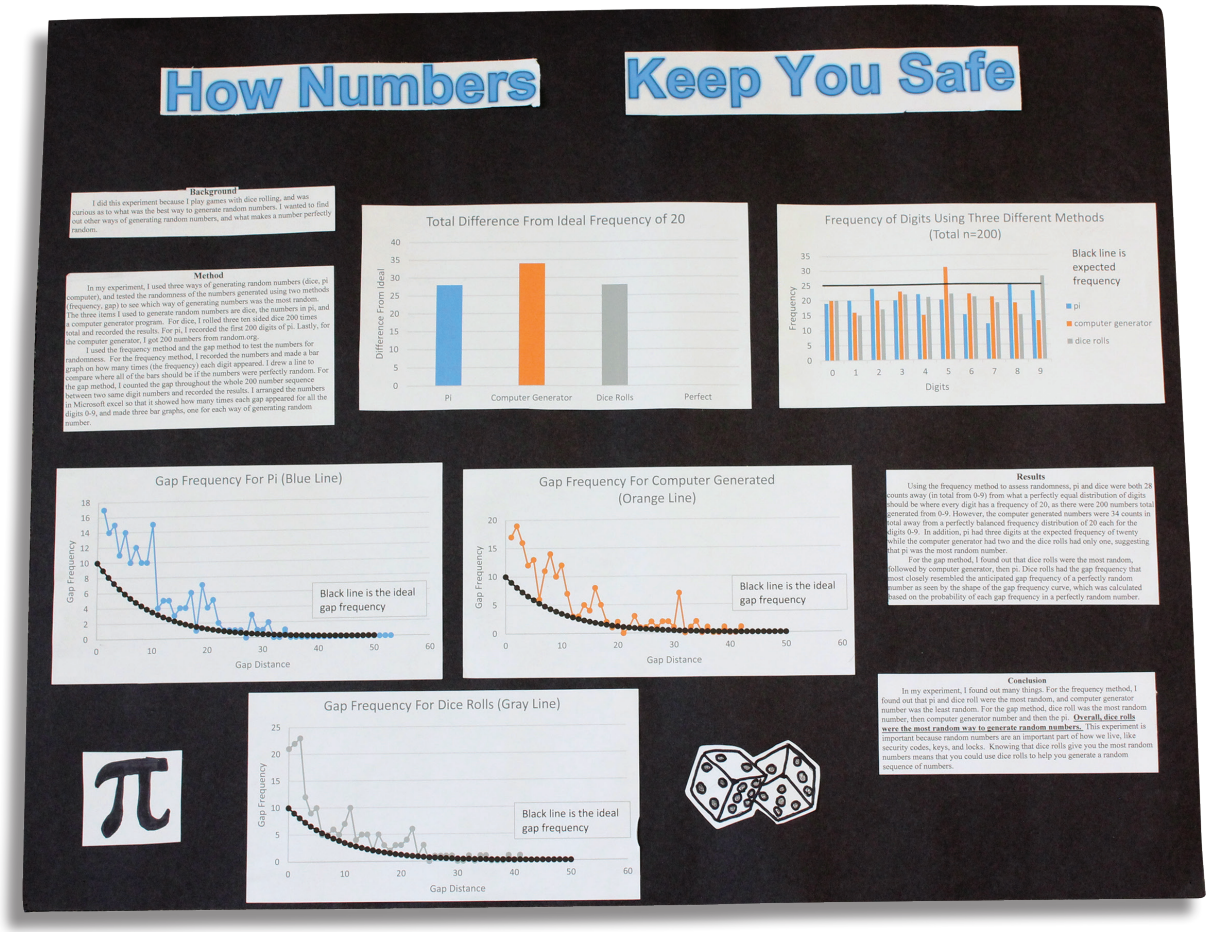
SECOND PLACE
Chandrima Chatterjee
Accuracy of Temperature Forecast During a Cold Winter
Rachel Carson Elementary School
Gaithersberg, Maryland

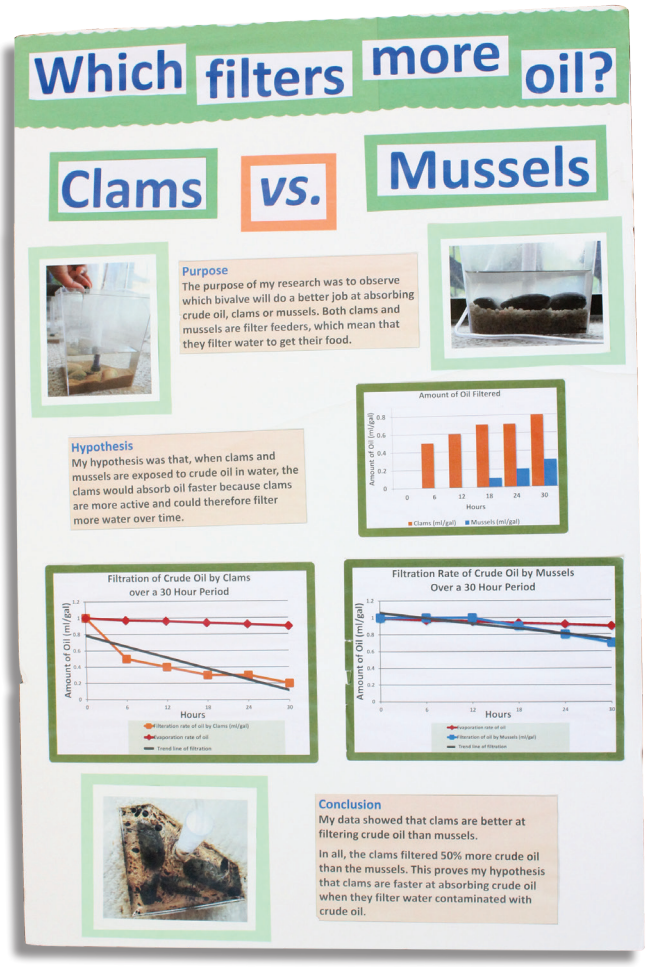
THIRD PLACE
Joanna Yi
Consuming Meat
Hyde Park Middle School
Las Vegas, Nevada

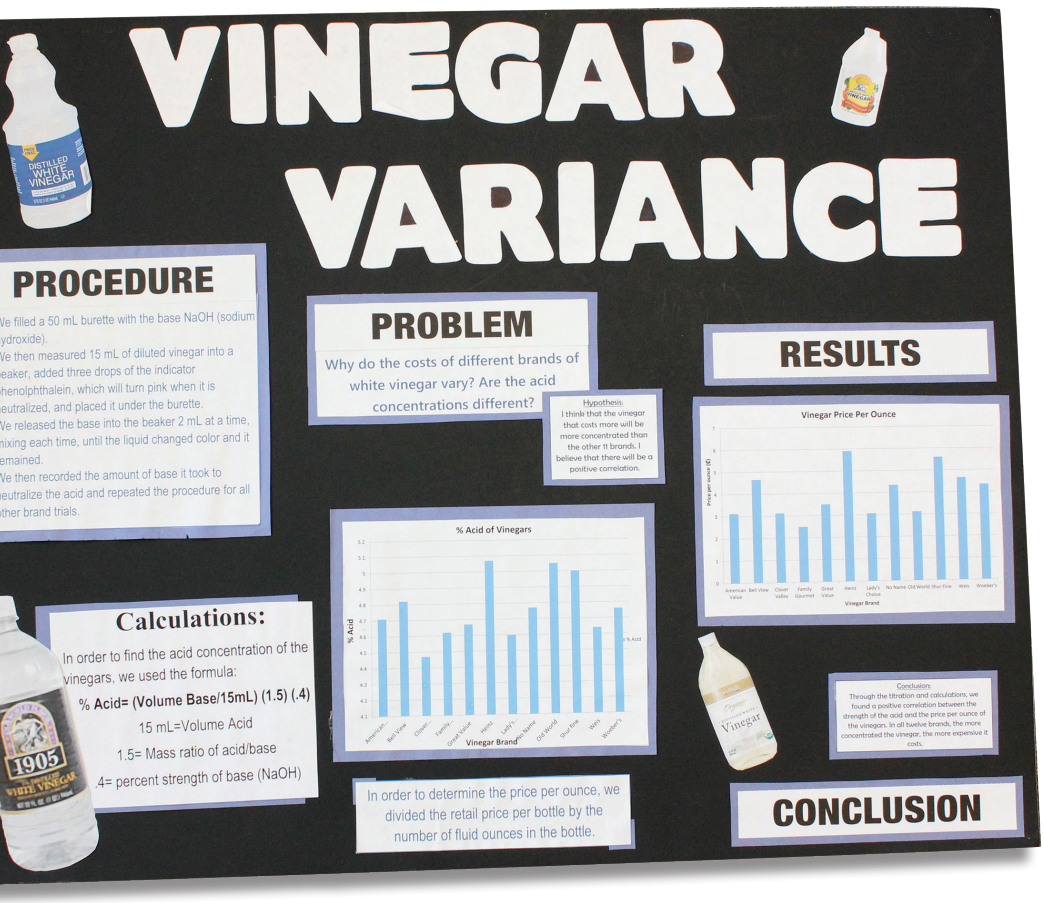
HONORABLE MENTION
Olivia Batrus
Will It Bounce?
St. Rose of Lima Elementary
Altoona, Pennsylvania

HONORABLE MENTION
Giovanni Corabi
Stop at the Sign or Get a Fine
Rydal Elementary
Abington, Pennsylvania


Do You Need To be Tall to Play BASKETBALL?
Introduction
Position of Top 20 Scorers
Point Guard
Shooting Guard
Small Forward
Power Forward
Center
Number of NBA Players by Height
Position of the Best Player on Each Team
Point Guard
Shooting Guard
Small Forward
Power Forward
Center
Conclusion
Average PPG by Height
Does Height Matter?
Points Per Game of Top Player on Each Team
Scatter Plot of Players' Heights and PPG


How Numbers Keep You Safe
Background
Method
Total Difference From Ideal Frequency of 20
Pi
Computer Generator
Dice Rolls
Perfect
Frequency of Digits Using Three Different Methods (Total n=200)
Black line is expected frequency
pi
computer generator
dice rolls
Digits
Gap Frequency For Pi (Blue Line)
Black line is the ideal gap frequency
Gap Distance
Gap Frequency For Computer Generated (Orange Line)
Black line is the ideal gap frequency
Gap Distance
Results
Gap Frequency For Dice Rolls (Gray Line)
Black line is the ideal gap frequency
Gap Distance
Conclusion





GRADES 7–9

FIRST PLACE
Gilbert Spencer
Do You Need to Be Tall for Basketball?
Half Hollow Hills High School West
Dix Hills, New York

SECOND PLACE
Zachary James
Which Filters More Oil: Clams vs. Mussels
Edgemont Jr./Sr. High School
Scarsdale, New York

THIRD PLACE
Katrina Bliss
Vinegar Variance
Mount Union Area Senior High
Mount Union, Pennsylvania

HONORABLE MENTION
Cordell Cheng
How Numbers Keep You Safe
Abington Junior High
Rydal, Pennsylvania

2015 Regional Poster Competition Leaders

Connecticut Chapter Statistical Poster Competition
Marianne E. Messina, Bristol-Myers Squibb
www.amstat.org/chapters/Connecticut/home/Poster/poster_index_2015.htm

Kansas/Missouri Statistics Poster Contest
Ananda Jayawardhana, Pittsburg State University
www.pittstate.edu/department/math/stats_poster.dot

Michigan Statistics Poster Competition
Dan Frobish, Grand Valley State University
www.gvsu.edu/stat/mspc-homepage-22.htm

Nevada K–12 Statistics Poster Competition
David Thiel, Thrivent Financial
www.amstat.org/chapters/nevada

Ohio Statistics Poster Competition
Linda Quinn, Cleveland State University
Jerry Moreno, John Carroll University
www.bio.ri.ccf.org/ASA/poster.html

GRADES 10–12

FIRST PLACE
Victor Chen and Kera Yang
Professor Salary Disparities
Saline High School
Saline, Michigan

SECOND PLACE
Kate Salmon and Ben Croy
Psychoactive Therapy for Mathematical Quandaries
Joplin High School
Joplin, Missouri

THIRD PLACE
Katherine Kim and Catherine Badding
High School Sweethearts
State College Area High School
State College, Pennsylvania

HONORABLE MENTION
Caroline Statler and Saniya Ablatt
Can High-School Students Differentiate Between Name Brand and Off-Brand Food and Drink?
Joplin High School
Joplin, Missouri

Pennsylvania Statistics Poster Competition
Pete Skoner, Saint Francis University Science Outreach Center
http://francis.edu/pa-statistics-poster-competition

Pullman, Washington Statistics Poster Competition
Dean Johnson, Washington State University
dean_johnson@wsu.edu

Washington Statistical Society Poster Competition (DC Metro Area)
Barnali Das, Westat
www.amstat.org/education/posterprojects

ASA National Poster Competition
Leader: **Rodney Jee**, Discover Financial Services

Contact: **Rebecca Nichols**, ASA Director of Education,
rebecca@amstat.org
www.amstat.org/education/posterprojects

Students outside the regional competition areas submit their posters directly to the ASA office, which are then separately judged by the Washington Statistical Society as part of the Other Region. The best posters from each region are sent to the national judging. Information about regional poster competitions and winners is available on the individual regional poster competition websites. ■

MASTER'S NOTEBOOK

Management Tips from Reyna —My Cleaning Lady

Mark Otto

Mark Otto is a statistician working on projects involving migratory birds for the U.S. Fish and Wildlife Service at Patuxent Wildlife Research Refuge in Maryland. (Yes, a refuge for research.) He earned his master's in statistics at North Carolina State University before spending 30 years working as a statistician, starting at the U.S. Census Bureau.

I was planning my week by copying over my long list of leftovers onto this week's to-do list. I was frazzled because I had a meeting in an hour and hadn't sent out notes from the previous meeting, and that was because I couldn't find my handwritten notes in the mass of, well, all my other hand-written notes. I was also behind on the Waterfowl Survey analysis. So rather than farm out the menial parts to my colleagues as we planned, I had to finish it myself! I was about to mentally implode when our office cleaning lady, Reyna, pushed me aside so she could vacuum.

"You spend more time making and copying those lists than knocking tasks off them. You think I keep lists like that," she asked me.

"Of course not, but my job is more complicated than yours," I said matter of factly.

Bad move … and I got kicked for it.

"I have to keep track of my home, my kids, my crew … but I only need a list to remember things. I still have to do the work; the list doesn't do that," said Reyna. "Your lists are so big you get scared of them. I've seen you get a look of accomplishment just for getting everything down."

"When I clean," she continued, "I wipe up the spills as they happen. Like those meeting notes. If you wrote them up right after your call last month, you wouldn't be trying to decipher your own handwriting and straining to remember what happened before this month's call. They are more useful if people have them to work from during the month? No?"

"Reyna, you're supposed to be cleaning, not looking over my shoulder," I said.

"Who looks," Reyna asked. "Everyone can hear you—all the way down the hall. It isn't only your computer that hears you. When you are tired and grumpy after lunch you get loud. Don't frustrate yourself doing something so complicated as writing meeting notes; file some of that junk on your desk. You are always losing something anyway."

"Reyna, I have a lot going on," I replied.

"So do I," she countered. "If Maria isn't here with the truck, I don't sit there waiting for her and the cleaning supplies, even though not getting to your restrooms and replacing the toilet paper is what you all complain about."

"Reyna …," I started.

"I just get the recycling done," she continued. "I can work five or six things at the same time. If I get hung up on one, I just start on another. But, I don't start something new while I'm finishing another, only because starting and finishing things is hard, very hard. All of us mothers are natural multitaskers, good at juggling. That is why we are the best managers; we only do what we have to do."

"What do you mean by that," I asked. "I work on what I need to do or what I'm told."

"Oh, is that right," Reyna asked. "You know I charge your boss, Ken, extra to clean your office?"

"Huh? He never told me that," I said.

"You have so much extra junk I have to move and clean—all those books, files, loose papers. *Gracias a dios*, I don't have to clean your inbox. It's so full; you need the Yahoo to find anything."

"You mean the Google," I said. "I mean, you think I need to Google anything I'm looking for?"

"All that clutter in this office and on your computer weighs you down," Reyna responded. "When are you going to read that *Making Forms in Access 2000*?"

"Your stuff owns you as much as you own it," she continued. "You have to move and sort it; look at those articles waiting to be read. And your section pays for storing all the stuff you can't fit in here anymore. You know the storage shed burned down 18 months ago. Ken didn't even tell you. They have bets on when you'll first ask for something from it."

"Uh. Oh, crap. But ... How does that make me do things I don't have to do," I asked.

"Remember when I helped you find last year's performance plan," Reyna asked.

"Yeah," I responded. "You made me clean out my desk. I had to clean out a whole file drawer before I found it."

"You did a good job! You only have three inches of files in there now," Reyna said. "Even if you hadn't found your plan, you'd have been able to find the staff directory and your directions on the phone to set up that conference call, things that you need."

"Gee, thanks," I said.

"Think what you could do with a completely clean office and email inbox," Reyna said.

"Hum," I replied.

"Did you do the chores your mama asked you to do," Reyna asked.

"Of course," I answered.

"Did you do them on your own," Reyna countered. "More when she asked nicely, no? Did she have a board with a chore list?"

"Yeah. And she pointed to it all the time," I answered. "She said so she wouldn't have to bug us so much."

"You don't even take the time to get your coworkers to help you with the Waterfowl Survey, which would have helped you in the long run. They could even do it on their own next year," Reyna said. "Your mama got you to want to help her clean by showing you how and how important what you were doing was. And when you were done, she said over and over what a good job you did. She made you feel very, very proud, and *now you know* how to clean up after yourself. Not that you actually do."

Just then Ken raced into my office. "Reyna, I need you on the phone," he said. "The *Dirección General de Aeronáutica Civil* …" Reyna disappeared down the hall.

"Ken, what's going on," I asked.

"We have to get permissions to fly our survey routes in Mexican air space. For the last three years, I've gotten Reyna to translate. Now she just negotiates for our permits herself. If only those Mexican generalissimos knew some cleaning lady from Honduras was making them feel like bad school boys. It is so fun to watch her work."

"By the way, Ken, I need the 1988 Spring Waterfowl Analysis from storage," I said.

"All right, you just made me $20," he exclaimed.

"What," I asked.

"I mean the storage shed was burned down a while ago and your files with it," Ken said. "I didn't tell you because we had this bet."

Thinkstock

"Oh well," I said. "I didn't need it anyway. Excuse me. I have a bit of organizing to do here."

"Oh," Ken said.

"You don't mind me taking the time just to clean up," I asked.

"Sure. I won't have to listen to you looking for 'that g(*&^)d!#$' file, and it will save us paying Reyna cleaning up around all your stuff," Ken said.

"Hey, I learned a lot from Reyna this morning," I said.

"Oh good," Ken said. "I fired The MBS Inc. consulting firm. All their workshops and training didn't improve anything. Reyna is who you all listen to."

"Soon you are going to have to pay her as a business consultant," I said.

"Oh Ken, I heard that," said Reyna from down the hall. ■

STAT*tr@k*

Discussing Data Science

Carl Letamendi

Carl Letamendi (Dr. L) is the data scientist at an NYC-based primary education charter school management organization. He earned his PhD in conflict analysis/social science and holds an MBA in finance.

There is no doubt in my mind that the title "data scientist" comes with sentiments of prestige and utmost responsibility. When one thinks of data science in general, the fields of computer science and statistics seem to come to mind. In my present role, I feel as though I have a unique experience: I can satisfy the expectations of my position; I have a foot in both fields, but belong to neither. Here's a short story of how I got to where I am and my opinion about where we stand in the 'data science tug-of-war' between computer science and statistical science.

My undergraduate degree is in business, and my master's degree is in finance, which essentially has a lot to do with statistical methods, forecasting, etc. While I was working on my master's, I knew I didn't want to be in banking. It wasn't of interest to me. As a graduate student during the recession, I did become interested in financial crises and all other social consequences and structural violence that resulted from financial crises, however. I immediately went on to earn my PhD, which was, ironically, in a branch of social sciences called "conflict analysis"—a perfect combination to satisfy my research agenda.

As a PhD student, I had a strong preference for quantitative methods research, and I developed a research interest in quantifying aggregate social behaviors (via indexing) to predict social realities. I created a theory I call "The Cycle of Aggregate Sentiment."

I was lucky enough to secure two short fellowships at the National Institutes of Health's National Institute on Drug Abuse (NIH/NIDA) and at the U.S. Department of Agriculture's Office of Civil Rights, Diversity, and Inclusion (USDA/APHIS/OCRDI), which gave me the opportunity to apply my analytical abilities to challenging projects in public health. However, after completing my fellowships and having my PhD conferred upon me in 2014, I, like most 20-somthings with a PhD, experienced something overly educated millennials experience—I had an extremely difficult time finding a job! After 300+ job applications and dozens of interviews, I felt like I was being discriminated against for having a terminal degree, for actually qualifying for the position, and for being too young.

One of my former classmates told me her employer needed someone who was quant-savvy and understood finance … in other words, me! After connecting with the CEO of the organization, interviewing, and performing a few SPSS work samples using raw data that was sent to me, I was hired! My wife and I stuffed our belongings into a U-Haul and moved from Florida to the NYC area.

My initial role in the organization was that of an "analyst" (financial and data), but we soon realized I didn't just "analyze"; the data culture was nonexistent and I had no formal training. Eventually, my superiors decided "data scientist" suited me best, since I am the person in the organization who is turned to for data and I encompass the three main skills needed for data science: computer programming, content knowledge, and statistical/quantitative abilities.

I essentially take raw data and students' assessment scores, decide how these data could be used and what kinds of correlations and assertions I can draw, and develop creative ways to solve any issues the data show me. I do not have a formal "research agenda," nor is there a set of specific reports the organization expects. It's basically my job to figure that out and promote a data culture across all elementary and middle schools in our network. It's been an interesting and lonely road. To date, I believe I am the only data scientist in primary education!

As an outsider with a coveted title, I have noticed "data science" seems to be the rope in a tug-of-war between the fields of statistics and computer science. In my opinion, it is somewhat unfair, but most positions that advertise for my job title require strong knowledge of computer programming skills (SQL, Python, Hadoop, R, C++, etc.). In fact, with just the title alone, I am flooded with emails via LinkedIn from data science/IT recruiters!

I have basic knowledge of Python and R, but even if I were 100% proficient, I wouldn't use it at work. I use a lot of stats, SPSS, and Excel, but very little programming. However, many data scientist positions I have seen require more programming and coding, less statistics. Personally, I don't think a computer science graduate can do what a statistics graduate can do, and vice versa. I believe data science requires two fields coming together, just as epidemiology brings together pathologists and statisticians, for instance.

I think data science is a buzzword being used in the tech world, among companies that have what qualifies as Big Data (Facebook, LinkedIn, Twitter, etc.). However, I think they are looking for candidates among themselves, and not among statisticians. It is almost as though our modern statisticians are *expected* to know how to code. I don't know if this is something that we, as "quants," will have to accept and adapt to, or if the field will push coding back to computer science folks and leave the statistics to statisticians. I guess this is one of those instances when it is appropriate to say only time will tell.

I read the ASA and *Significance* magazines often and one thing I notice is that those who give advice to current statistics students sometimes say they would double major—statistics and computer science—if they could do it all again. But see, I don't think it's necessary. I simply think that we, in the field of statistics and in the social sciences, should understand programming to a level of proficiency expected of us to meet the demand. There are free courses out there that can teach the basics. I like to perceive data science, computer science, and statistics as adjacent cogs in a wheel with a similar objective, but they cannot easily replace each other!

If statistics and computer science are engaged in a game of tug-of-war and data science is the rope, I think we should actually use the rope to bind us so we can collaborate by contributing our unique areas of expertise. My hope is that employers will realize a need for both statisticians *and* computer scientists and advertise positions for both, so as to maximize their analytical potential as an organization. ■

In Praise of ASA Membership

Jay Devore, Professor Emeritus of Statistics, California Polytechnic State University

I taught in the department of statistics at California Polytechnic State University for more than 30 years and served a sentence as department chair for seven of those years. Cal Poly puts more emphasis on teaching than research, though all faculty are strongly encouraged to engage in broadly interpreted professional development activities. I recently became aware that some of the younger faculty members in the department were skeptical of the value of membership in the American Statistical Association. I sent those individuals a message, and several of them responded saying they would like to be convinced. I responded to them more or less as follows:

I just received the newest issue of *Amstat News*. Inside, there is a list of all people who have belonged to the ASA for at least 35 years. Roughly 250 people have belonged for at least 50 years, and about 300 for between 45 and 49 years (I am in this latter category). I conjecture that most of those folks are retired, but they continue their membership. Not, I think, because they any longer derive significant direct benefits from doing so, but because they see membership as a way of showing their support for and strengthening the profession. I don't think direct benefit should be the driver of a decision to belong, any more than it plays much of a role when people make charitable contributions. I really like the feeling of being part of a large and hopefully growing statistical community.

By the way, among other tidbits in the issue, there is an amusing interview with several members of The Imposteriors, a band of statisticians who will be playing at the upcoming JSM. Without membership, I would not have read the publication and would have missed out on this story about our musical brethren. I also find that having my own copies of *The American Statistician* and *JASA* makes me less inclined to neglect reading those; I especially enjoy the book reviews, without which it would be difficult to identify new candidates for textbook adoptions.

I continue to be aware of how demoralized many faculty members are because of lack of progress in increasing compensation. I felt the same way for years after I came into the California State University system. But during that period, I never considered discontinuing my ASA membership. The larger the organization, the more impact it will have in exerting a constructive influence on the direction of statistics in our country and the world. That, to me, is a very good thing. ■

INTERNATIONAL NEWS

Participants and presenters of the meta-analysis workshop at the University of Southern Queensland, Australia

Meta-Analysis Workshop Hosted by University of Southern Queensland

Shahjahan Khan, University of Southern Queensland

The school of agricultural, computational, and environmental sciences and the division of research and innovation at the University of Southern Queensland (USQ) hosted a workshop titled "Statistical Meta-Analysis with Applications" in collaboration with the Statistical Society of Australia Inc. at the USQ Ipswich Campus June 16–17.

The organizer of the workshop, Shahjahan Khan of USQ, opened the inaugural session with an introduction of the meta-analysis within the systematic review and evidence-based decision-making process and the role of statistical methods in synthesizing data from independent studies. He also highlighted applications of meta-analysis in medicine, agriculture, education, and business and discussed issues related to methods of allocation of weights under various models in the estimation of common effect size of meta-analysis.

Bimal Sinha of the University of Maryland and Suhail Doi of Australian National University gave invited talks.

Sinha began with motivating real-life examples of data leading to the definition of measures of various effect sizes for continuous and binary outcome variables. He covered all commonly used estimators of common effect size and discussed their variance estimators and confidence intervals. He also discussed inference about the common mean of univariate normal distribution, publication bias, vote-counting procedures, and heterogeneity, along with the random effects (RE) model and meta-regression.

Doi highlighted the main purpose of meta-analysis and focused on problems inherent with conventional statistical meta-analysis, especially unfair redistribution of more weights to smaller studies under the random effects model. Under the title "Recent Advances in the Methodology of Statistical Meta-Analysis," he presented the inverse variance heterogeneity estimator as an alternative to the RE model estimator and introduced the quality effect model estimator based on his recent publications. Through extensive simulation examples, he demonstrated the advantages and appropriateness of the new estimators.

Twelve participants from government, industry, and academia throughout Australia attended the workshop. ■

Penn State Holds 2015 Rao Prize Conference to Honor Winners

The Penn State Department of Statistics held the 2015 Rao Prize Conference May 14 to honor the following three prize recipients:

- C. R. and Bhargavi Rao Prize - **Sir David R. Cox**, professor emeritus of statistics and honorary fellow of Nuffield College at the University of Oxford
- P. R. Krishnaiah Lecturer - **Nancy M. Reid**, professor of statistical sciences at the University of Toronto
- C. G. Khatri Lecturer - **Vijay V. Raghavan**, Alfred and Helen Lamson Endowed Professor in Computer Science at the University of Louisiana at Lafayette

C.R. Rao and Nancy Reid

About 100 researchers attended the conference.

The conference program consisted of three plenary speakers, four invited speakers, and a poster presentation by postdoctoral and graduate students. Plenary speakers were Cox, Reid, and Raghavan. Invited speakers included Aurore Delaigle of the University of Melbourne, Bing Li of Penn State, Runze Li of Penn State, and Jeffrey Racine of McMaster University.

A highlight of the conference was the awarding of the 2015 Rao Prize to Cox, who is an elected fellow of the Royal Society of London, honorary fellow of the British Academy, foreign associate of the U.S. National Academy of Sciences, foreign honorary member of the American Academy of Arts and Sciences, foreign member of the Royal Danish Academy of Sciences and Letters, foreign member of the Indian National Academy of Science, and foreign associate of the Indian Academy of Science. He was a winner of the Guy Medal in Silver in 1961 and the Guy Medal in Gold in 1973 of the Royal Statistical Society, the Kettering Prize and Gold Medal for Cancer Research in 1990, and the Copley Medal of the Royal Society in 2010. He was knighted by Queen Elizabeth II in 1985 and served as editor of *Biometrika* from 1966 to 1991. He also served as president of the Bernoulli Society, Royal Statistical Society, and International Statistical Institute. Cox has received honorary doctoral degrees from Harvard University, Oxford University, the University of Minnesota, the University of Toronto, Waterloo University, and many others.

The conference also highlighted Reid and Raghavan. Reid is an elected fellow of the Royal Society of Canada and a recipient of the Committee of Presidents of Statistical Societies Presidents' Award in 1992, the Krieger-Nelson Prize in 1995, the Statistical Society of Canada Gold Medal in 2009, and the Statistical Society of Canada Distinguished Service Award in 2013. Raghavan is a recipient of the Web Intelligence Consortium Outstanding Service Award, the Association for Computing

From left: Runze Li, C.R. Rao, and graduate students Zhanxiong Xu and Ningtao Wang

Machinery Distinguished Scientist Award, and the IEEE International Conference on Data Mining Outstanding Service Award.

The C.R. and Bhargavi Rao Prize was established to recognize outstanding and influential innovations in the theory and practice of mathematical statistics, international leadership in directing statistics research, and pioneering contributions by a recognized leader in the field of statistics.

The C. G. Khatri Memorial Lectureship and P. R. Krishnaiah Memorial Lectureship honor the memory of C. G. Khatri and P. R. Krishnaiah by inviting outstanding researchers in statistics to deliver lectures at Penn State.

Details about the conference can be found at *http://stat.psu.edu/Events/2015-Rao-Prize*. ■

Sir David Cox gives the 2015 C.R. and Bhargavi Rao Lecture.

USGS Statistician Honored with Mentoring Award

Lillian S. Lin, 2015 Jeanne E. Griffith Award Selection Committee Chair

Aldo "Skip" Vecchia was recently selected to receive the 2015 Jeanne E. Griffith Mentoring Award for his mentoring of junior staff across government.

Vecchia is a senior statistician with the U.S. Geological Survey (USGS) in Bismarck, North Dakota. He uses statistical approaches to understand climate variability and the effects of this variability on the water cycle. One particular problem he is addressing is understanding the hydrology of Devils Lake, North Dakota. This is a closed basin lake (there is no outlet), which recently has expanded greatly due to a prolonged wet spell. The area of the lake is about 330 square miles, and the local, state, and federal governments have spent more than $450 million for flood control. Should the lake rise another few feet, it will overtop its natural banks, spill, and water will make its way via the Red River of the North to Hudson Bay. Vecchia's contributions have helped decision-makers understand the probability of this catastrophic occurrence.

In presenting Vecchia with a plaque and check, Carol House—co-chair of this year's award committee—said the letters nominating him were compelling, as they described Vecchia as an expert in the field who is always willing to share his skills and encourage his colleagues. She commented that she was struck by his advocacy and support of the research others participate in, his partnerships with junior staff to build their confidence, his ability to help staff learn how to solve complex problems, and his integrity and commitment to public service. Karen Ryberg, a statistician at the North Dakota Water Science Center, nominated Vecchia for this award.

Aldo "Skip" Vecchia was selected as the 2015 Jeanne E. Griffith Mentoring Award winner.

The Award

The Jeanne E. Griffith Mentoring award honors Griffith, who died in 2001 after working for more than 25 years in the federal statistical system. The award acknowledges supervisors; technical directors; team coordinators; or other members of federal, state, or local government statistical staff who make unique efforts to mentor and encourage younger staff at all levels to learn and grow and recognize and seize career opportunities. The award includes a plaque and a $1,000 honorarium.

The Ceremony

On June 10, the award committee hosted a ceremony and reception to honor Vecchia. His family, friends, and colleagues joined friends of Griffith, the award committee, and the Interagency Council on Statistical Policy (ICSP) at this event. This year's ceremony marked the 13th annual presentation of the award and the seventh year that the ASA's Government Statistics Section (GSS) has managed the award process.

House led the ceremony, welcoming the audience and introducing Katherine Wallman, U.S. chief statistician; Jerad Bales, chief scientist for water at USGS; and Andy Orlin, Griffith's spouse.

Wallman introduced Vecchia, award sponsors, past mentoring award winners in attendance, and members of the ICSP in attendance. She talked about the role of the ICSP in supporting the award and acknowledged the award's cosponsors: the ASA GSS, National Opinion Research Center, Westat, Council of Professional Associations on Federal Statistics, American Institutes for Research, American Educational Research Association, ICSP, Stata, and ASA Social Statistics Section.

Orlin reminded the audience of the history of the award. He congratulated the winner and thanked the members of the 2015 award committee, which also includes Kevin Cecco, Brian Harris-Kojetin, Lillian Lin (chair), Bill Mockovak, and Anna Nevius. In particular, he thanked

From left: Anthony Vecchia, Michele Vecchia, Skip Vecchia, and Jerad Bales

House for her participation in the award committee for more than 10 years. Orlin noted the committee has continued to publicize and spread the word about the award, keep sponsors funding the effort, and, most importantly, select a truly deserving individual to receive the award.

Bales briefly described the work of the USGS. He pointed out that even though the USGS is not a statistical agency, much of their work is dependent on statistical modeling and methodology. He also highlighted Vecchia's role as a senior statistician at USGS and the contributions he has made in that capacity. Bales then talked about the importance of mentoring and Vecchia's work with younger statisticians and water scientists. He read several quotations from individuals Vecchia mentored over the years. One person said, "It's very reassuring to me that my son will be starting off his career getting the same kind of outstanding mentoring from Skip that I received throughout mine."

The Recipient

Vecchia is a graduate of Colorado State University, where he earned his bachelor's, master's, and doctoral degrees in statistics. In receiving the award, he first introduced his family members who traveled from North Dakota with him. He then thanked Bales for mentoring him during his many years at USGS and his colleagues for nominating him. He noted that Ryberg is in the prime of her career at USGS, so he felt particularly humbled that she views him as a mentor. Vecchia also noted that Gregg Wiche, recently retired as Water Science Center director, has been a great supporter and Joel Galloway, Vecchia's supervisor, has encouraged him, and now Ryberg, to explore challenging and interesting projects in stochastic hydrology and environmental statistics. He said Steven Sando and Wes Stone, water quality and hydrology experts at USGS, have mentored him as much as he feels he has mentored them, demonstrating that mentoring can be a two-way street. He also praised Kelsey Kolars, a Student Pathways intern at USGS, for her enthusiasm and abilities and noted how much fun it has been to serve as her mentor.

Vecchia thanked the many mentors who have helped him throughout his career, including former Colorado State University Statistics Department faculty Frank Graybill, Peter Brockwell, Richard Davis, Sid Resnick, Paul Mielke, Hari Iyer, and Duane Boes, who was also his PhD adviser. He also thanked the many USGS scientists who helped him early in his career, especially Bob Hirsch, Bill Alley, Jurate Landwehr, Brent Troutman, Bob Gilliom, and Richard Cooley.

Vecchia remarked that mentoring must be something you do without really knowing it, because he never considered

himself to be a good mentor. Learning he was to receive the award provided him the opportunity to reflect on what makes a good mentor. First, good mentors need to be experienced, he said, and experience comes with age. He reflected on his experiences early in his career teaching and advising MS and PhD students. In retrospect, he said he was more focused on his research so tended to instruct, rather than provide ideas and let the students attack problems on their own. Vecchia now thinks a good mentor is always there to help, but not to push. Along with age (or experience), comes humility in the form of realizing you can't do everything yourself, said Vecchia. You realize you need the people you are mentoring more than they need you.

Second, mentors need the right work environment to promote mentoring. As two of the few scientists in the water mission area of the USGS who focus on statistics, he and Ryberg are in high demand to help ensure findings published in USGS reports are well-supported by the data. As the hundreds of world-class scientists who seek their advice know the value of statistics and strive to maintain a tradition of promoting scientific rigor and excellence, it hasn't seemed like mentoring, as these colleagues are eager to learn and the problems are interesting.

Finally, through the USGS Water Cooperative Program, Vecchia has had the opportunity to promote statistics to an audience outside his agency. This program, supported jointly by USGS and state and local government agencies, allows him to work with hundreds of scientists at other agencies and attend numerous city council meetings, local water board meetings, and conferences. Vecchia has presented findings to the North Dakota governor and his staff and to the North Dakota Congressional Delegation and its staff. He remarked that he didn't consider any of this mentoring at the time. However, when the award was announced, in addition to lots of congratulatory emails from colleagues at USGS and people he knew from graduate school, he received the most emails from people he met through this program congratulating him and thanking him for all the mentoring he has provided through the years.

Vecchia closed by thanking those in attendance for sharing this career highlight and the honor of receiving the award. ■

Monroe Sirken Award

John Czajka (right) presents the first Monroe Sirken Award to Norman Bradburn (center). Sirken (left) endowed the Sirken Award and Lecture to recognize outstanding interdisciplinary work in survey research methodology. More information about this award and award winners who will be recognized at JSM will be in the October issue of *Amstat News*.

Intel International Science and Engineering Fair 2015

Yu Cheng, University of Pittsburgh and ASA Pittsburgh Chapter President, and Douglas Splitstone, Splitstone & Associates

The Pittsburgh Chapter of the ASA participated in the 2015 Intel International Science and Engineering Fair (ISEF), which was held in the Pittsburgh convention center May 10–15. The ISEF is the largest pre-college science and engineering fair in the world.

This year, there were 1,354 projects presented by 1,698 secondary school students ranging in age from 10–20. These students represented 77 countries and territories. All 50 U.S. states were represented, as well as American Samoa, Puerto Rico, and the U.S. Virgin Islands. Fifteen local and outside judges, led by Chad Schafer of Carnegie Mellon University, contributed their time to canvassing the 1,354 projects and identifying the award winners. Most judges were impressed by the breadth of knowledge and intellectual maturity many of the students possess. Following is a summary of those projects recognized by the ASA for the best use of statistics.

1st Place

Melissa Amber Yu, 18, Farragut High School, Knoxville, Tennessee

Developing an Automatic Nonrigid Image Registration Algorithm for Nanoscience Research

Melissa developed an automatic nonrigid image registration algorithm to correlate distorted low-resolution hyperspectral data with less distorted high-resolution spatial data. The algorithm used bivariate polynomials and built on methods such as scale invariant feature transform and random sample consensus to improve the accuracy of the registration by identifying locally distorted keypoints and minimizing the impact of false matches. An application-specific outlier rejector was also developed based on mutual information. Several judges had a chance to review the project and interview Melissa. We were all impressed by the sophistication of the project and some of us even wondered whether we could do as well as Melissa did.

2nd Place

Yashaswini Makaram, 17, Massachusetts Academy of Math and Science, Worcester, Massachusetts

The Phoney Lift: Using Accelerometers to Identify People

The second-place winner developed a new level of cell phone security based on the unique motions the owner uses to pick up their phone. The motions used by a non-owner were then statistically compared with those of the owner. The algorithm of classifying users as an owner or non-owner was tuned using a receiver operating characteristic curve to identify the optimum operating point. The clever study design and use of statistics in the project made it well deserved for second place.

3rd Place

Niranjan Balachandar, 18, Texas Academy of Mathematics and Science, Denton, Texas

A Novel Coevolution Data-Based Approach for Computational Drug Design to Target Intrinsically Disordered Proteins

The third-place winner developed statistical algorithms to identify disordered proteins and investigate their genetic modification via statistical simulation to improve their therapeutic properties while retaining their cell binding properties. Niranjan demonstrated its application and efficacy with Hepatitis C. There is the promise that his technique will drastically speed up the development of genetically based therapies for other conditions, notably cancer, as well.

From left: Niranjan Balachandar, 18; Yashaswini Makaram, 17; and Melissa Amber Yu, 18, show off their ribbons at the 2015 Intel International Science and Engineering Fair, held in May in Pittsburgh, Pennsylvania.

In addition, there were seven honorable mentions with such diverse topics as adolescent health, mathematical analysis of Ebola transmission, functional neural networks, development of bakery product, galaxy star formation, novel biomarker algorithm for early cancer detection, and Arctic sea ice melting.

The three award winners received $1,500, $1,000, and $500 for the first, second, and third prizes, respectively. All American Statistical Association finalists received one year of ASA membership, which includes subscriptions to *Significance* and *CHANCE*. In addition, Taylor & Francis Group and Cengage Learning donated magazines and books to participating students. ■

2015 Mary G. and Joseph Natrella Scholarship Awards

Will Guthrie, Natrella Scholarship Selection Committee Chair

The Quality and Productivity Section recently awarded two Mary G. and Joseph Natrella Scholarships at the 2015 Quality and Productivity Research Conference, which was held June 10–12 in Raleigh, North Carolina.

The 2015 honorees are **Youngjun Choe**, a PhD candidate in the department of industrial and operations engineering at the University of Michigan in Ann Arbor, and **Keivan Sadeghzadeh**, a PhD candidate in the department of mechanical and industrial engineering at Northeastern University in Boston, Massachusetts.

Choe was recommended for the award by professors Vijay Nair and Eunshin Byon. His presentation at the conference was titled "Uncertainty Analysis for Importance Sampling Estimators with Stochastic Simulations."

Choe

Sadeghzadeh

Sadeghzadeh was recommended for the award by professors Nasser Fard and Beverly K. Jaeger. The title of his presentation was "Analytical Heuristic Decision-Making Methods for Complex High-Dimensional Failure Data Selection and Classification."

The recipients were chosen for their outstanding teaching, community service, mentoring, leadership, scholarship, and commitment to the pursuit of quality improvement through the use of statistical methods.

The scholarships are funded from the ASA Natrella Scholarship Fund and Quality and Productivity Research Conference. Each Natrella Scholarship recipient gave a research presentation at the conference and received a $3,500 scholarship, plus $500 for travel expenses and complimentary registration for the conference and pre-conference short course.

Current members of the scholarship selection committee are Scott Kowalski, Minitab; Christina Mastrangelo, University of Washington; Sharad Prabhu, SAS; and Jolene Splett, NIST. ■

CSP Registration, Travel Support Available for Students

The Lingzi Lu and Lester R. Curtin awards offer registration and travel support to students attending the ASA Conference on Statistical Practice. The Lester R. Curtin Award provides $1,000 in travel support, and the Lingzi Lu Award provides up to $1,300 in travel support.

Visit *www.amstat.org/awards/lingzilumemorialaward.cfm* for information about the Lingzi Lu Memorial Award and *www.amstat.org/awards/lesterrcurtinaward.cfm* for information about the Lester R. Curtin Award.

The 2016 ASA Conference on Statistical Practice will take place February 18–20 in San Diego, California.

See ***www.amstat.org/meetings/csp/2016/index.cfm*** for details.

CSP
San Diego, California
February 18-20 2016

Obituaries

Todd G. Nick

Stephen W. Looney, Georgia Regents University

Todd G. Nick, 50, died May 22 after a long and courageous battle with cancer. At the time of this death, he was director of biostatistics in the department of pediatrics at the University of Arkansas for Medical Sciences (UAMS) in Little Rock, with a secondary appointment in the biostatistics program in the Fay W. Boozman College of Public Health at UAMS.

Todd made many contributions to the American Statistical Association, serving as program chair (1997), newsletter editor (1998), and chair (2002) of the Section on the Teaching of Statistics in the Health Sciences and program chair (2006) and chair (2010) of the Section on Statistical Consulting. He was a regular contributor at the Joint Statistical Meetings (JSM), and papers based on his presentations regularly appeared in the *JSM Proceedings*. In addition to serving as presenter at JSM, Todd also organized and chaired several topic-contributed sessions.

Todd earned his BS in zoology in 1987 from Louisiana State University and completed his PhD in biometry under the direction of Varghese George in the department of biometry and genetics at the Louisiana State University Medical Center in New Orleans in 1992. He spent the summer of 1989 working as an intern in the section of biostatistics, department of health sciences research, at Mayo Clinic.

After completing his PhD, Todd spent a year as an instructor of biostatistics in the college of pharmacy at Xavier University in New Orleans. In 1993, he accepted a position as assistant professor in the department of health sciences in the school of health related professions (SHRP) at the University of Mississippi Medical Center in Jackson, where he also held a joint appointment in the division of biostatistics in the department of preventive medicine in the school of medicine. He was to remain at SHRP for 12 years, moving steadily up through the ranks to associate (1997–2002) and full professor (2002–2005). In 2005, Todd accepted a position in the department of pediatrics at the University of Cincinnati College of Medicine, working primarily in the Center for Epidemiology and Biostatistics at the Cincinnati Children's Hospital Medical Center. He also held a joint appointment in the division of human genetics. In 2009, Todd accepted the final appointment of his career, at UAMS.

Nick

Todd was an effective collaborator with investigators in many clinical areas, including traumatic injury, traumatic brain injury, emergency medicine, and pediatrics. In addition, throughout his career, he continued to pursue the research trajectory in statistical genetics that began with his dissertation. Todd also made contributions to general statistical methodology, including a paper on regression to the mean in *Biometrics*, two articles in *CHANCE*, a chapter in *Statistical Case Studies: A Collaboration Between Academe and Industry*, and two chapters in *Methods in Molecular Biology: Topics in Biostatistics*. In 2014, Todd co-authored a textbook with three faculty members in physical medicine and rehabilitation on clinical research methods. Altogether, he had more than 140 publications during his 25-year academic career.

Todd's positive attitude and persistence in the face of extreme adversity and severe illness will continue to serve as an example for us all. Todd was a friend, colleague, collaborator, teacher, mentor, and leader for many of us in the ASA and statistical community at large, and he will be missed. May he rest in peace.

Todd is survived by his wife of 25 years, Julie, and children, Adam Edward, Laurie Ann, Paul August, and Evelyn Marie, all of Little Rock.

A more complete obituary was published in the Summer 2015 issue of the ASA Section on the Teaching of Statistics in the Health Sciences newsletter. Visit the section website at *http://community.amstat.org/tshs/home* for details.

Obituaries

Thomas W. Copenhaver

Thomas W. Copenhaver of New Hope, Pennsylvania, passed away on April 22, 2015, at age 69. Raised in Walthill, Nebraska, Tom earned his bachelor's degree from the University of Nebraska in mathematics and physics and later earned his PhD in statistics from Colorado State University. He worked for Wyeth as a biostatistician for 32 years, until his retirement in 2006 as senior director of biometrics research.

Copenhaver

Tom served on the PhRMA Biostatistics and Data Management Steering Committee in the late 1990s and the executive committee of the ASA Philadelphia Chapter in the 1980s. However, Tom's most notable achievement—in his role as a mentor and coach—was his positive influence on the careers of numerous colleagues in the pharmaceutical industry. One former direct report from the early 1980s notes the profound impact Tom had on her career: inspiring her with his love of statistics, encouraging her to pursue a higher degree, resulting in her having had a highly successful career in the pharmaceutical industry lasting more than 30 years. All his colleagues value the role Tom played in their lives.

Tom is survived by his wife of 37 years, Margaret (Marge) DiPonzio. Together, they travelled extensively and were active in their community of New Hope and surrounding Bucks County. Tom was a Nebraska Cornhusker fan and, during the off-season, he loved being outdoors, rafting down the Delaware River or simply enjoying a walk along the towpath with his canines—all shelter rescues. On occasion, Tom could be found sampling a fine local craft beer. His gentle wit and kindness will be sorely missed.

Frederick (Fred) Walter Leysieffer

Frederick (Fred) Walter Leysieffer passed away on April 14, 2015. Born in Milwaukee and raised in Wauwatosa, Wisconsin, Fred graduated with a PhD from the University of Michigan in 1964 and moved to Tallahassee, Florida, with his new bride, Annelise, to join the faculty of the statistics department at Florida State University (FSU).

Fred, or "Dr. Leysieffer" to his students, had a long, fulfilling career at FSU. Besides being professor emeritus of statistics and chairing the department from 1981–1987 and 1990–1993, Fred served as faculty senate president from 1992–1994, acting and associate dean of the college of arts and sciences from 1994–1997, and associate vice president for academic affairs and associate provost for six years.

He completed his career with nearly a decade in the office of research, where he greatly enjoyed working on a team responsible for bringing the High-Performance Materials Institute and the Aero-Propulsion, Mechatronics, and Energy Building to Innovation Park. Fred respected and loved his university family and the many long friendships built there.

Fred was a lifelong learner and avid traveler with Annelise. To read his complete obituary, visit *http://bit.ly/1eXm2Py*.

Ramanathan (Ram) Gnanadesikan

Ram Gnanadesikan, one of the foremost industrial statisticians of the last century, passed away on July 6, 2015, in Martha's Vineyard, Massachusetts, where he had a much-beloved summer home.

His full obituary is online: *http://magazine.amstat.org/blog/2015/07/14/gnanadesikan.*

sectionnews

Biometrics

Edited by Sheng Luo, Biometrics Section Publications Officer

The Biometrics Section is accepting applications for a travel award of up to $3,000 to attend a clinical trials methodology workshop for imagers in La Jolla, California, January 9–15, 2016.

The workshop, held by the Radiology Society of North America (RSNA), presents an opportunity for PhD-level biostatisticians interested in conducting methodological or collaborative research in radiology/imaging clinical trials to learn the relevant methodology and gain experience collaborating with radiologists and imaging specialists.

The intensive one-week workshop on clinical trial methodology for faculty members and fellows in radiology, radiation oncology, and nuclear medicine academic departments provides hands-on training in the design, conduct, analysis, and interpretation of clinical trials in radiology and imaging through didactic sessions, one-on-one mentoring, small discussion sessions, self-study, and protocol development workgroups. A curriculum infused with statistical and methodological concepts and examples was developed for this workshop, which provides a student to faculty ratio close to 1:1. The biostatistician attendee will shadow biostatistics faculty members to observe the collaborative process of developing clinical trials in radiology, in addition to learning the methodological aspects of the field.

Eligible applicants will hold a PhD in biostatistics or a related field (e.g., statistics) and have an interest in the design, conduct, and analysis of imaging clinical trials. Applicants should email a one-page letter of interest, CV, and letter of support from their department head to Diana Miglioretti at *dmiglioretti@ucdavis.edu* with "RSNA CTMW Biostatistics" in the subject line.

The deadline for receipt of applications is August 15. Announcement of the award will be made by October 1.

JSM 2016

It's also time to think about invited sessions for next year's Joint Statistical Meetings, which will be held July 30 to August 4, 2016, in Chicago, Illinois. Anyone interested in organizing an invited session or who has ideas for one should contact our 2016 program chair, Dipankar Bandyopadhyay, at *bandyopd@gmail.com*.

A typical invited session consists of three 30-minute talks followed by a 10-minute invited discussion and 10 minutes of floor discussion. However, other formats are possible. The 2015 program is a good source for examples.

Remember, the most mature ideas will have an advantage in competing for the limited number of slots, so it's best to have your ideas in final form. The Biometrics Section will have at least four invited sessions, but if we generate enough good ideas, we will be able to compete for additional slots.

Please also submit ideas for short courses to our 2015–2016 continuing education chair, Andrea Troxel, at *atroxel@mail.med.upenn.edu*. ■

Statistics in Epidemiology

Invited session proposals are being accepted for the 2016 Joint Statistical Meetings, which will be held July 30 to August 4 in Chicago, Illinois. If you have an idea for one, send your ideas/proposals to the section's program chair, Daniel Gillen, at *dgillen@uci.edu* by September 4.

In the proposal, provide the following:

- Session Title
- Session Description
  a. Short description of the session that explains why it would be of interest to statisticians interested in epidemiologic applications.
  b. List of invited speakers/panelists (affiliation, email address for each participant, and tentative title for each presentation). Please indicate if speakers have been confirmed and will be attending JSM 2016.
  c. Format of session (e.g., paper or panel, number of speakers/discussants/panelists as applicable).
  d. Session organizer (affiliation, email address).
  e. Session chair (affiliation, email address).
  f. Discussant (if any) (affiliation, email address).

In previous years, sessions with complete information had a greater likelihood of acceptance. ■

sectionnews

Physical and Engineering Sciences

Greg Piepel, Industrial Speakers Program Chair

What does an applied statistician really do? How do they solve problems in science, engineering, technology, and business? What nontechnical skills are required to be successful as an applied statistician? The Marquardt Industrial Speakers Program was established by the Section on Physical and Engineering Sciences (SPES) in the early 1990s to help answer such questions by coordinating visits by experienced statisticians to universities and colleges across the country. Speakers typically visit with students and faculty early in the day and give a seminar later. SPES reimburses the host institution up to $500 for the speaker's visit.

If you are an institution interested in having a speaker, or a SPES member interested in being on the speakers list, contact Greg Piepel at *greg.piepel@pnnl.gov* or (509) 375-6911.

Zhen Wang, FTC Program Committee Chair

The 59th annual Fall Technical Conference will be held in Houston, Texas, October 8–9. The program includes sessions in design of experiments, reliability, statistical process control, modeling, and simulation. There will also be a SPES special session titled "Success and the Statistician." The opening plenary session will be given by William Q. Meeker.

The following short courses will be offered October 7:

- Data Visualization by Jim Wisnowski, Adsurgo LLC
- Definitive Screening Designs: What, Why, and How by Bradley Jones, SAS Institute, and Christopher Nachtsheim, University of Minnesota
- Peering into the Future: Introduction to Time Series Methods for Forecasting by David A. Dickey, North Carolina State University
- Split-Plot Design and Analysis by Peter Goos, University of Antwerp and Erasmus University Rotterdam

Visit the conference website at *http://asq.org/conferences/fall-technical* to register. Registration fees increase September 15. Also, the hotel rooms reserved at a special conference rate are limited. Reserve your room as soon as possible by visiting *www.starwoodmeeting.com/Book/FTJ06C*. ■

chapternews

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

San Francisco Bay Area

For the 5th consecutive year, chapter volunteers were invited to give talks about careers in statistics to AP Statistics students at Menlo Atherton High School. Drew Watson (Invitae), Adam Ghobarah (Google), and Chris Barker gave talks to more than six classes taught by Ron Weiss. Pictures from the presentations can be viewed at *http://tinyurl.com/SFBAYapstats2015*.

Volunteers and past speakers include Ai Chu Wu, Doug Okamoto, Carol Franciso, Xiaolin Wang, Bart Barrington, Heather Watson, and Nacer Abrouk. ■

September

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

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

›› Indicates events posted since the previous issue

1–3—5th International Conference on Proteomics and Bioinformatics, Valencia, Spain
For details, visit *proteomics conference.com* or contact Sheeba Kosari, 5716 Corsa Ave., Suite 110, Los Angeles, CA 91362-7354; (650) 268-9744; *proteomics@omicsgroup.com*.

2–5—9th International Multiple Comparisons Procedures (MCP) Conference, Hyderabad, India
For more information, visit *www.mcp-conference.org/hp/2015* or contact Ajit Tamhane, Dept. of IEMS, 2145 Sheridan Road, Evanston, IL 60208; (847) 491-3577; atamhane@northwestern.edu.

7–10—2015 Annual Conference of the International Association for Mathematical Geosciences, Freiberg, Germany
For details, visit *iamg2015.de* or contact Regina van den Boogaart, Balthasar-Rößler-Str. 58, Freiberg, International 09599, Germany; *iamg2015@iamgmembers.org*.

7–10—RSS 2015 International Conference, Exeter, United Kingdom
For more information, visit *www.rssconference.org.uk* or contact Paul Gentry, 12 Errol St., London, International EC1Y 8LX, United Kingdom; (207) 614-3918; *conference@rss.org.uk*.

14–16—International Conference on Signal Processing, Las Vegas, California
For more information, visit *signalprocessing.conferenceseries.com* or contact Robert Richards, 5716 Corsa Ave., Suite 110, Los Angeles, CA 91362; (650) 268-9744; *signal processing@conferenceseries.net*.

» **14–16—World Congress and Exhibition on Antibiotics, Las Vegas, Nevada**
For details, visit *antibiotics.omicsgroup.com* or contact Isaac Bruce, 5716 Corsa Ave., Suite110, Westlake, Los Angeles, CA 91362; (650) 268-9744; *antibiotics@conferenceseries.net*.

» **18—John W. Tukey 100th Birthday Celebration at Princeton University, Princeton, New Jersey**
For more information, visit *csml.princeton.edu/tukey* or contact Esther Kim, 258 Carl Icahn Laboratory, Princeton, NJ 08544; (609) 258-9862; *estherk@princeton.edu*.

***19–22—2015 International Total Survey Error Conference (TSE15), Baltimore, Maryland**
For details, visit *www.tse15.org* or contact Jill Hronek, 111 Deer Lake Road, Suite 100, Deerfield, IL 60015; (847) 480-9712; *jhronek@sherwood-group.com*.

20–23—Applied Statistics 2015, Ribno (Bled), Slovenia
For details, visit *conferences.nib.si/AS2015* or contact Andrej Blejec, Vecna pot 111, Ljubljana, International SI-1000, Slovenia; *andrej.blejec@nib.si*.

21–23—World Congress and Expo on Medical Devices, Orlando, Florida
For more information, visit *medicaldevices.omicsgroup.com* or contact Aaron Wells, 5716 Corsa Ave., Suite 110, Los Angeles, CA 91362; (650) 268-9744; *medical devices@omicsgroup.com*.

24—21st Federal Forecasters Conference, Washington, DC
For details, visit *www.21st-ffc-2015.eventbrite.com* or contact Jeff Busse, 987 National Center, Reston, VA 20192; (703) 648-4914; *jbusse@usgs.gov*.

***26—New England Symposium on Statistics in Sports, Cambridge, Massachusetts**
For details, visit *www.nessis.org* or contact Mark Glickman, EN Rogers Memorial Hospital, 200 Springs Road (152), Bedford, MA 02138; (781) 687-2875; *mg@bu.edu*.

28–10/2—ECAS Course on Statistical Analysis of Network Data, Herrsching, Germany
For more information, visit *www.statistik.lmu.de/ecas/index.html* or contact Göran Kauermann, Ludwigstrasse 33, Munich, International 80539, Germany; +49 89 2180 2220; *goeran.kauermann@stat.uni-muenchen.de*.

October

5–7—4th International Conference on Clinical Microbiology and Microbial Genomics, Philadelphia, Pennsylvania
For more information, visit *clinicalmicrobiology.conferenceseries.com* or contact Clinical Microbiology 2015, 5716 Corsa Ave., Suite 110, Los Angeles CA 91362-7354; (650) 268-9744; *clinicalmicrobiology@conferenceseries.net*.

5–7—Primary Health Care Initiates Open Peer Review Model: Embedding Technology, San Francisco, California
For more information, visit *nursing.conferenceseries.com* or contact Rakesh Sanapu, 731 Gull Ave., Foster City, CA 94404; (650) 618-9889; *contact.omics@omicsonline.org*.

13–15—Nonclinical Biostatistics Conference 2015, Villanova, Pennsylvania
For more information, visit *www.ncb2015.net* or contact Paul McAllister, P.O. Box 1539, King of Prussia, PA 19406; (610) 787-3233; *paul.r.mcallister@gsk.com*.

21–23—International Conference on Machine Learning and Data Analysis, San Francisco, California
For details, visit *www.iaeng.org/WCECS2015/ICMLDA2015.html* or contact IAENG Secretariat, Unit 1, 1/F, 37-39 Hung To Road, Hong Kong, International HK, Hong Kong; (852) 3169-3427; *wcecs@iaeng.org*.

» **22–23—2015 Duke-Industry Statistical Symposium, Durham, North Carolina**
Fore more information, contact Sharon Updike, 2424 Erwin Road, Durham, NC 27705; (919) 684-8038; *sharon.updike@duke.edu*.

26–28—Translational Medicine-2015, Baltimore, Maryland
For more information, visit *translationalmedicine.conferenceseries.com* or contact Monalisa Williams, 890 Elkridge Landing Road, Linthicum, MD 21090; (888) 843-8169; *translationalmedicine@omicsgroup.com*.

26–28—International Conference on Protein Engineering, Chicago, Illinois
For details, visit *protein-engineering.conferenceseries.com* or contact Santhosh Wilcox, DoubleTree by Hilton Hotel Chicago - North Shore, 9599 Skokie Blvd., Skokie, IL 60077-1314; (650) 618-9889; *proteinengineering@conferenceseries.net*.

26–28—4th International Conference and Exhibition on Nutrition, Chicago, Illinois
For details, visit *www.nutritionalconference.com* or contact John Benson, 5716 Corsa Ave., Suite 110, Westlake, Los Angeles, CA 91362-7354; (650) 268-9744; *nutrition@omicsgroup.com*.

» **28–29—Modern Math Workshop at SACNAS National Conference, Washington, DC**
For details, visit *www.msri.org/e/MMW2015* or contact Anne Pfister, 17 Gauss Way, Berkeley, CA 94720; (510) 642-0448, *annepf@msri.org*.

29–30—European Seminar on Bayesian Econometrics 2015, Gerzensee, Switzerland
For more information, contact Corinne Conti, Dorfstrasse 2, Gerzensee, International 3115, Switzerland; 4131 780 3110; *corinne.conti@szgerzensee.ch*.

» 30**–31—Celebrating Rod Little's 65th Birthday: Advances in Causal Inference, Survey Statistics, Disclosure Risk, and Missing Data, Ann Arbor, Michigan**
For details, visit *www.sph.umich.edu/biostat/events/rod-little-event.html* or contact Michael Elliott, M4124 SPHII, 1415 Washington Heights, Ann Arbor, MI 48105 (734) 647-5160, *mrelliot@umich.edu*.

November

2–4—3rd International Conference on Endocrinology, Atlanta, Georgia
For more inforamtion, visit *endocrinology.conferenceseries.com* or contact Jessie Rose, 2360 Corporate Circle, Suite 400, Henderson, NV 89074-7722; (888) 843-8169; *endocrinology@omicsgroup.com*.

3–5—International Conference on Thrombosis and Hemostasis, Beijing, China
For details, visit *thrombosis-hemostasis.conferenceseries.com* or contact James Anderson, Medical Conferences, 2360 Corporate Circle, Suite 400, Henderson NV 89074-7722; (888) 843-8169; *thrombosis@conferenceseries.net*.

9–11—Global Summit and Expo on Healthcare, Dubai, UAE
For more information, visit *healthcare.global-summit.com/middleeast* or contact John Parker, 2360 Corporate Circle, Suite 400, Henderson, NV 89074-7722; (650) 268-9744, *dubaihealthcare@conferenceseries.net*.

» **30–12/2—6th International Conference on Clinical & Experimental Cardiology, San Antonio, Texas**
For more information, visit *cardiology.conferenceseries.com* or contact Carol Smith, 5716 Corsa Ave., Suite 110, Westlake, Los Angeles, CA 91362; (888) 843-8169; *metabolomics@conferenceseries.com*.

» **30–12/2—Head & Neck Surgery, Atlanta, Georgia**
For details, visit *http://headnecksurgery.global-summit.com* or contact Rechard Samuel, 2360 Corporate Circle, Suite 400, Henderson, NV 89074; (888) 843-8169, *headnecksurgery@omicsgroup.com*.

UTHealth | School of Public Health
The University of Texas Health Science Center at Houston

Biostatistics
Professor & Department Chair

The University of Texas School of Public Health (UTSPH) is seeking an energetic and visionary leader to become chairperson of the Department of Biostatistics. A strong candidate should have the ability to continue to develop a long-term vision for the department, develop new programs, increase and complement the success of existing programs, mentor UTSPH junior faculty and students, and engage in collaborative research with other faculty members.

Candidates must have a doctoral degree in biostatistics, statistics, or a related field, and the qualifications/credentials commensurate with an appointment as a tenured, full professor at UTSPH. Candidates should also have a strong record of independent and collaborative research, history of securing extramural funding, outstanding interpersonal and communication skills, and an excellent record of leadership and team-building skills.

The UTSPH Department of Biostatistics (https://sph.uth.edu/divisions/biostatistics/) has over 45 years of excellence in teaching and research. It is composed of 21 full-time faculty members, 10 staff members, and 120 students. Faculty research interests are broad and include Bayesian statistics, bioinformatics, computational biology, design and analysis of clinical trials, longitudinal data analysis, spatial modeling, statistical analysis with missing data, statistical genetics, stochastic modeling, survival analysis, and time series. The Coordinating Center for Clinical Trials (CCCT), with a mission to design and conduct large multi-center controlled clinical trials, is closely associated with the department. The CCCT was established in 1971 by biostatistics faculty members at UTSPH and has provided an avenue for both conducting clinical trials and developing related methodological research. The CCCT has played a leading role in cardiovascular diseases, diabetes, ophthalmology, and neurological research.

UTSPH is an integral part of The University of Texas Health Science Center at Houston (UTHealth). Located in the Texas Medical Center, UTSPH has five regional campuses (Austin, Brownsville, Dallas, El Paso, and San Antonio). Currently, three biostatisticians in the Department of Biostatistics are located on three of the regional campuses.

Salary is competitive and commensurate to rank, experience, and qualifications. An excellent comprehensive benefits package is available. Candidates should apply online by uploading a letter of interest (describing qualifications and research interests), CV, and contact information for three professional references to: http://jobs.uth.tmc.edu/applicants/Central?quickFind=104917. For inquiries: write to Dr. Wenyaw Chan at Wenyaw.Chan@uth.tmc.edu. The application will remain open until the position is filled; screening will begin on September 1, 2015.

UTHealth is an EEO/AA employer. UTHealth does not discriminate on the basis of race, color, religion, gender, sexual orientation, national origin, genetics, disability, age, or any other basis prohibited by law. EOE/M/F/Disabled/Vet. Minority and women are strongly encouraged to apply. This is a security-sensitive position and thereby subject to Texas Education code 51.215. A background check will be required for the final candidate.

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

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

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

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

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

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

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

California

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■ Associate Director for Research and Methodology, National Center for Health Statistics, Centers for Disease Control and Prevention (*www.cdc.gov/nchs/*), Hyattsville, MD. Serves on NCHS's senior staff and directs the Office of Research and Methodology, the agency's central methodological research, development, and collaborating unit. Doctorate in statistics or related field required. For further information, visit *www.cdc.gov/nchs/about/employ.htm* and/or contact Nathaniel Schenker, NCHS Deputy Director (*nschenker@cdc.gov*). CDC/NCHS is an Equal Opportunity Employer.

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■ One fixed-term specialist, Department of Statistics & Probability, MSU — see *www.stt.msu.edu/Job_Postings.aspx* for more information. PhD in statistics or a related field, demonstrated instructional excellence in introductory undergraduate statistics. Upload a cover letter, CV, an essay on teaching, evidence of teaching excellence, and three reference letters to the site of position #1492 at *https://jobs.msu.edu*. Review will begin 11/01/2015, continue until positions are filled. *www.stt.msu.edu/*

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■ Assistant/Associate Professor, Statistics Department, University of Missouri, tenure track assistant/associate position; all areas of statistics are encouraged to apply. PhD in statistics required by August 15, 2016. Apply online at *http://hrs.missouri.edu/find-a-job/academic.* Upload cover letter, CV, research & teaching statements. Deadline: December 1, 2015. Have three letters of recommendation sent to *umcstatfacsearch@missouri.edu*. The University of Missouri is an Equal Opportunity/Affirmative Action/ADA Employer.

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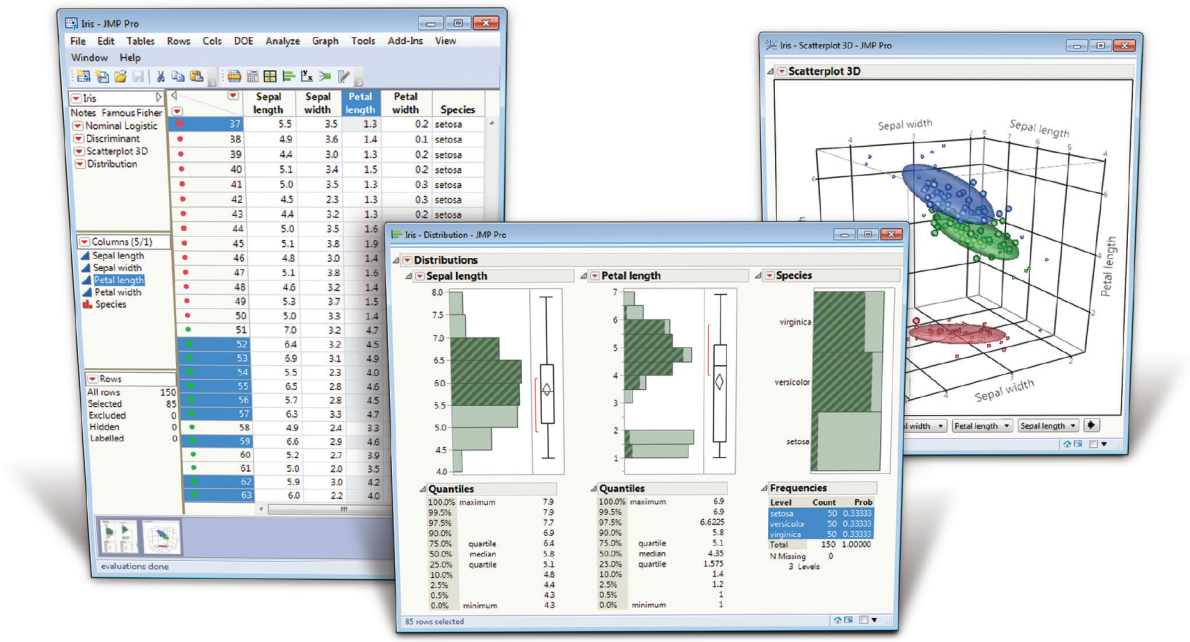

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