

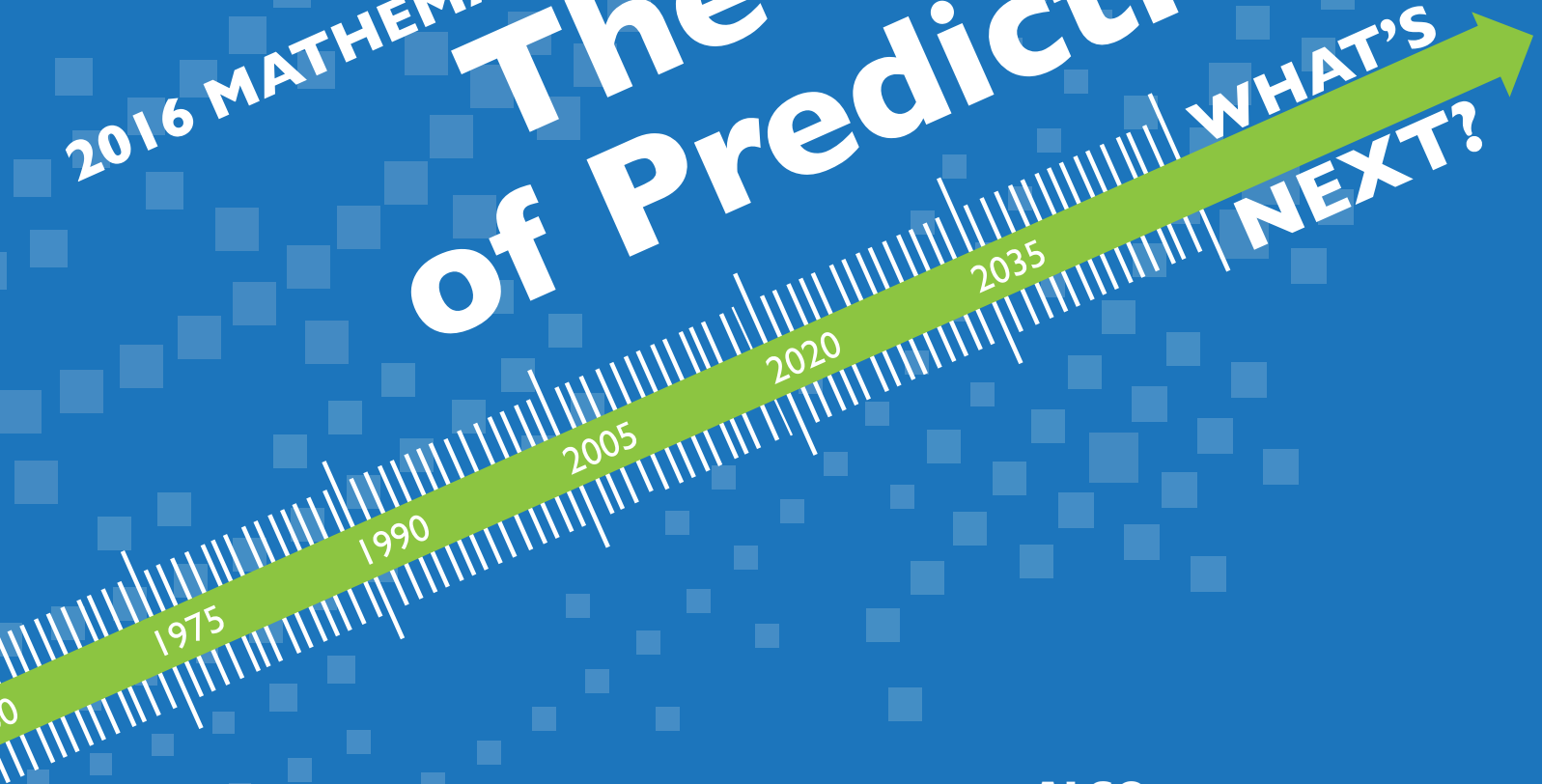
April 2016 • Issue #466

AMSTATNEWS

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

2016 MATHEMATICS AWARENESS MONTH

The Future of Prediction



ALSO:

Learning on the Left Coast: CSP Has Another Successful Year

Recognizing the ASA's Longtime Members

Learn from the Experts Online!

Graduate Programs in Survey Methodology



JPSM

The Joint Program in Survey Methodology

A Consortium of the University of Maryland, the University of Michigan, and Westat

Expand your knowledge in the areas of:

- Big Data
- Applied Sampling
- Questionnaire Design
- Analysis of Complex Data
- Small Area Estimation
- Social and Cognitive Foundations of Survey Measurement
- And more!

For more information and to register, please visit jointprogram.umd.edu



Register now
for the Fall
Semester

AMSTATNEWS

APRIL 2016 • ISSUE #466

Executive Director

Ron Wasserstein: ron@amstat.org

Associate Executive Director and Director of Operations

Stephen Porzio: steve@amstat.org

Director of Science Policy

Steve Pierson: pierson@amstat.org

Director of Strategic Initiatives and Outreach

Donna Lalonde: donnal@amstat.org

Director of Education

Rebecca Nichols: rebecca@amstat.org

Managing Editor

Megan Murphy: megan@amstat.org

Production Coordinators/Graphic Designers

Sara Davidson: sara@amstat.org

Megan Ruyle: meg@amstat.org

Publications Coordinator

Val Nirala: val@amstat.org

Advertising Manager

Claudine Donovan: claudine@amstat.org

Contributing Staff Members

Amy Farris • Amanda Conageski • Eric Sampson

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

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

American Statistical Association
732 North Washington Street
Alexandria, VA 22314-1943 USA
(703) 684-1221

ASA GENERAL: asainfo@amstat.org

ADDRESS CHANGES: addresschange@amstat.org

AMSTAT EDITORIAL: amstat@amstat.org

ADVERTISING: advertise@amstat.org

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

Printed in USA © 2016
American Statistical Association



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

features

- 3 President's Corner
- 5 Recognizing the ASA's Longtime Members
- 13 ASA Participates in Sixth Climate Science Day
- 14 ASA Leaders Reminisce: Nancy Geller
- 16 Statisticians as Leaders
- 18 *Significance* Gets New Look
- 19 Learn Survey Research Techniques in the 2016 Summer Institute
- 20 ASA Receives Grant to Establish Series of REUs
- 22 2016 Mathematics Awareness Month: The Future of Prediction
- 24 FH17 Requests for NIH, NSF, Federal Statistical Agencies Largely Positive
- 27 JQAS Highlights: Fantasy Football, Basketball, Tennis, Designing Tournaments Featured in March Issue
- 28 Review and Edit, Writing Workshops Planned for JSM

columns

- 30 **STATtr@k**
Internships Make Such a Difference: The Experiences of Four Students

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

- 32 **SCIENCE POLICY**
Leadership Is Listening: Data-Driven Decision-Making at NIGMS

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

SIDEBAR



N-1

Epitaph for Statisticians

Robert L. Hudson, *Mississippi State University*
Written in 1976-1977 while teaching the graduate statistics courses in the psychology department at the Harvard of Mississippi.

A mix of squares and roots
And cowboy boots,
Not entirely random
But variable

Called cruncher and brother
And frequently lover,
They relate to a range
Not entirely discretely
But significantly

With thoughts of samples and means
And filled blue jeans,
They live their days
Not entirely average
But normal

But even when behavioral parameters
are prudent
Whether Fisher or Pearson, Gossett,
or Student

Sooner or later the last point must be
plotted
And whether life was robust or should just
be blotted

When the final test is booted and run
The terminal sum is N-1

Corrections

In the March issue, we wrote that abstract submission opens March 31 for the Spring Research Conference, but it closes March 31. We apologize for the error. For the most up-to-date information about the conference, visit <http://bit.ly/1S0bais>.

In the 2017 ASA Board of Directors Candidates story, the workplace for Tony An should have been SAS Institute, Inc.

departments



- 34 **meetings**
Learning on the Left Coast: CSP Has Another Successful Year
- 38 **education**
Christine Franklin Named First ASA K-12 Statistical Ambassador

member news

- 39 People News
- 44 Section • Chapter • Committee News
- 45 Professional Opportunities



Follow us on Twitter
www.twitter.com/AmstatNews



Join the ASA Community
<http://community.amstat.org/home>



Like us on Facebook
www.facebook.com/AmstatNews



Follow us on Instagram
www.instagram.com/AmstatNews

The Story Behind the ASA Statement on *P*-Values

Almost 30 years ago (1988), I published a paper in the *Journal of Parapsychology* titled “Successful Replication versus Statistical Significance” in which I argued against the use of the standard “ $p \leq .05$ ” as the criterion for judging the success of an experiment. I pointed out the problems with *p*-values that statisticians were well aware of even then, but many scientists (and journal editors) are only now beginning to understand, such as the role of sample size in determining statistical significance. The paper generated substantial discussion, and at the Parapsychological Association annual conference that year, someone distributed T-shirts to support my point of view. (See accompanying photo on the next page.)

For the past year, the ASA has had a committee working on elucidating principles that should accompany the use of *p*-values. I asked Ron Wasserstein, ASA’s executive director, to answer some questions about how this came about.

The ASA recently released a statement on *p*-values, and you were involved throughout the process. How did the ASA decide to get involved?

Former ASA Vice President George Cobb suggested the ASA take some action. Many statisticians were already quite concerned about statistical issues in the “reproducibility crisis” in science. At its spring 2014 meeting, the board discussed whether to take this on. Board members observed that this was new ground for the ASA, but agreed it was important for us to do.

In what way is this new ground?

Certainly in recent years, the ASA has addressed matters through policy statements—matters of importance such as the role of statistics in data science, value-added models in educational assessment, risk-limiting election audits, qualifications for introductory statistics instructors, and so on. None of these, however, speaks to such a fundamental practice of statistics as does this statement.

Once the ASA decided to get involved, how did the process get started?

The board gave me the responsibility of assembling a panel of experts on the subject. It wasn’t hard to find a great group of statisticians for this task. We looked at the literature and identified people who were actively writing about these matters. We asked those people who else we should be talking to and reached out from there. It was important to the board that a rich variety of perspectives be included. In the end, we approached more than two dozen people, almost all of them saying they would be willing to be involved. There was skepticism on the part of many as to whether a statement could be agreed upon, but the skeptics wanted to be involved nonetheless.

What happened next?

We went to work. We decided on an outline for the statement and broke the work of creating the pieces of the statement into three parts. We formed subgroups to address each part. Each subgroup had a leader, and the leaders began email discussions about the relevant topics. Things moved along, but after a while, we began to hit some snags.

Let’s talk about snags. It took a long time from start to finish on this. Colleagues have expressed surprise at that, saying “I could have written a statement on *p*-values in an afternoon.” Why did it take so long?

An afternoon won’t get it done, but I admit I had no idea at the outset it would take as long as it did. Like so many things, the issues here are much more complicated than they first appear. They are both foundational and practical, theoretical and methodological. Issues that have been debated at least since Fisher and Neyman and Pearson are still in play, and Bayesian philosophies and methods add to the mix. Then there is a whole other dimension. Statisticians are happy engaging in these debates, but our intended audiences need us to get real, to sort things out and explain what needs to change in the way they practice



Jessica Utts

MORE ON *P*-VALUES
Check out social media responses to the ASA’s *p*-value statement on Page 48.

statistics. There are lots of opinions about this. In the words of George Cobb parodying the birthday problem, “How many statisticians does it take to ensure at least a 50% chance of disagreement about p -values?” George says the answer is either 1 or 2!

In the end, the statement was not much like the original outline. The long effort and thoughtful deliberation paid off, however, in a statement that should accomplish its purposes.

What do you hope this statement will accomplish?

We have big dreams for this statement. We’d love to see the practice of science with respect to its use of statistical inference undergo a cultural shift. We envision a “post $p < 0.05$ era,” one in which scientific argumentation is not based on whether a p -value is small enough. In this era, attention would be paid to effect sizes and confidence intervals. P -values, when used, would be reported as values, rather than inequalities ($p = .0168$, rather than $p < 0.05$). Indeed, we envision there being better recognition that measurement of the strength of evidence really is continuous, rather than discrete. In this era, all the assumptions made that contribute information to inference would be examined, including the choices made regarding which data are analyzed and how. In the post $p < 0.05$ era, sound statistical analysis will still be important, but no single numerical value will substitute for thoughtful statistical and scientific reasoning.

The journals are the gatekeepers that can usher in this era. If the statement succeeds in its purpose, journals will stop using statistical significance to determine whether to accept an article. Instead, journals will accept papers based on clear and detailed description of the study design, execution, and analysis. The papers will have conclusions based on valid statistical interpretations and scientific arguments, and they will be reported transparently and thoroughly enough to be rigorously scrutinized by others. We won’t be left scratching our heads trying to sort out researcher degrees of freedom. The file-drawer effect will be reduced.

We know there are areas of science and related journals following many of these practices already, but we hope the statement will drive others in that direction. We also know this isn’t change that happens overnight.

How can ASA members help?

The statement can’t achieve its purposes if only statisticians know about it. Members can help



The Parapsychological Association gave ASA President Jessica Utts a T-shirt in 1988 to support her criticism of p -values.

enormously by sharing the statement through their networks, both social media networks and personal networks. For the really ambitious, giving a seminar on p -values and statistical inference for nonstatistical colleagues in the workplace would be a great way to engage. Many of our members are asked to referee papers for journals in other disciplines, and even may serve as associate editors. They could inform those journal editors of our statement and base their own reviews on its principles.

Will the ASA be following a similar process on other topics? If so, what are some possibilities?

I think we should be, and I think the board agrees. We would love to get ideas from members about appropriate topics. Perhaps we could drill further down into aspects of the ASA’s recent statement on the role of statistics in data science. Are there areas of research practice where there are Bayesian methodologies that should be employed but aren’t? There is a lot of concern about multiple testing and confirmatory vs. exploratory research. If there are areas in which we have things to say that could make a difference, let’s do it!

Jessica Utts

Recognizing the ASA's Longtime Members

The American Statistical Association would like to thank its longtime members by continuing its tradition of honoring those who joined the association 35 or more years ago. This year, we recognize the following members for their distinguished and faithful membership.

If you are a longtime member and will be attending JSM 2016 in Chicago, Illinois, please join us for a reception in your honor. If your name is not below and you believe it should be, contact Amy Farris at amy@amstat.org to correct your record.

50+ Years

Khazan C. Agrawal	Thomas J. Boardman	Norman R. Draper	Rudy A. Gideon	Gudmund R. Iversen
Dennis J. Aigner	Donald J. Bogue	Satya D. Dubey	Dennis C. Gilliland	Thomas B. Jabine
Murray A. Aitkin	Jack R. Borsting	George T. Duncan	Phil D. Gilliland	Laurence F. Jackson
Jack Alanen	Alan Bostrom	Douglas M. Dunn	Leon J. Gleser	Ronald L. Jacobson
Philip J. Ambrosini	Kimiko O. Bowman	Arthur M. Dutton	V. P. Godambe	Aridaman K. Jain
Carol H. Ammons	David R. Brillinger	Morris L. Eaton	Charles H. Goldsmith	Bruce Johnston
Sigmund J. Amster	Lyle D. Broemeling	Bradley Efron	Arnold F. Goodman	Richard Hunn Jones
Theodore W. Anderson	Donna J. Brogan	Jonas H. Ellenberg	Leo A. Goodman	Karl G. Joreskog
Gary M. Andrew	Maurice C. Bryson	Robert C. Elston	Donald Guthrie	Joseph B. Kadane
Charles E. Antle	Charles R. Buncher	William B. Fairley	Irwin Guttman	Graham Kalton
Barry C. Arnold	Norman Bush	William R. Fairweather	Gerald J. Hahn	Marvin J. Karson
Joseph R. Assenzo	John M. Chambers	Kenneth H. Falter	Martin A. Hamilton	Marvin A. Kastenbaum
Barbara A. Bailar	Herman Chernoff	Paul I. Feder	J. Wayne Hamman	Shrinivas K. Katti
John C. Bailar	Janet E. Cherry	Charles Federspiel	Roy Dean Hardy	Gordon M. Kaufman
R. Clifton Bailey	Robert P. Clickner	Ivan P. Fellegi	William L. Harkness	Kathleen M. Keenan
John J. Bartko	Arthur Cohen	Arlin M. Feyerherm	David A. Harville	William J. Kennedy
Noel S. Bartlett	Ayala Cohen	Stephen E. Fienberg	Kenneth Harwood	Jon R. Kettenring
Rex J. Bates	Theodore Colton	David John Finney	Victor Hasselblad	Benjamin F. King
David L. Bayless	William Jay Conover	Richard L. Forstall	Ronald W. Helms	Elizabeth S. King-Sloan
John J. Beauchamp	Richard G. Cornell	Alan B. Forsythe	William G. Henderson	John J. Kinney
Gerald J. Beck	John W. Cotton	Martin R. Frankel	Neil W. Henry	Melville R. Klauber
Donald F. Behan	David R. Cox	Ralph F. Frankowski	Jay Herson	Michael H. Klein
Donald L. Bentley	J. R. Crespo	Donald A. S. Fraser	Milton C. Heuston	Gary G. Koch
Rudolf J. Beran	Ralph B. D'Agostino	Edward L. Frome	John E. Hewett	Uwe Koehn
Alan P. Berens	Martin H. David	Carol Holly E. Fuchs	William J. Hill	Mel Kollander
Mark L. Berenson	Herbert T. Davis	Wayne A. Fuller	Bruce Hoadley	Stephen L. Kozarich
Robert H. Berk	Miles Davis	A. Ronald Gallant	Vincent Hodgson	Lawrence L. Kupper
Donald A. Berry	John J. Deely	Joseph L. Gastwirth	Paul W. Holland	Thomas E. Kurtz
Elmer S. Biles	Arthur P. Dempster	Donald P. Gaver	Myles Hollander	Michael H. Kutner
William C. Blackwelder	Frank T. Denton	David W. Gaylor	J. Stuart Hunter	Ronald E. Kutscher
Saul Blumenthal	Dennis O. Dixon	Jane F. Gentleman	Hiroshi Ikeda	Peter A. (Tony) Lachenbruch
Colin R. Blyth	Thomas E. Doerfler	Jean D. Gibbons	Arthur G. Itkin	John C. Lambert

Eugene M. Laska	Jerry L. Moreno	Walter Piesch	J. Richard Schmid	J. Richard Trout
William J. Latzko	Donald F. Morrison	S. R. S. Rao Poduri	Stanley Schor	Bruce E. Trumbo
Malcolm R. Leadbetter	John W. Morse	Ralph D. Pollard	Stanley L. Sclove	Chris P. Tsokos
Eun S. Lee	Mervin E. Muller	Richard F. Potthoff	Donald T. Searls	N. Scott Urquhart
Ferdinand Lemus	Thomas D. Murphy	John W. Pratt	Daniel G. Seigel	Constance van Eeden
Fred C. Leone	Janet M. Myhre	S. James Press	Robert J. Serfling	Pearl A. Van Natta
David Levine	Patricia L. Nahas	Charles H. Proctor	Norman C. Severo	Willem R. Van Zwet
Eugene Levine	Charles B. Nam	Dana Quade	Babubhai V. Shah	James R. Veale
Robert A. Lew	Joseph I. Naus	J. N. K. Rao	William F. Shaw	Harvey M. Wagner
Thomas M. Lewinson	Wayne B. Nelson	Joan S. Reisch	Monroe G. Sirken	Ray A. Waller
James M. Lucas	Marc Nerlove	Gladys H. Reynolds	Betty J. Skipper	Robert C. Walls
Edward MacNeal	John Neter	Robert H. Riffenburgh	Armand V. Smith	James A. Walsh
Brian D. Macpherson	Mark J. Nicolich	Larry J. Ringer	William Boyce Smith	William G. Warren
Albert Madansky	W. Michael O'Fallon	Naomi B. Robbins	Ronald D. Snee	Steve Webb
Richard Maisel	Anthony R. Olsen	Bruce E. Rodda	Daniel L. Solomon	Bruce S. Weir
Colin L. Mallows	Richard A. Olshen	Charles A. Rohde	Edward J. Spar	Herbert I. Weisberg
Charles R. Mann	Anthony M. Orlando	Joan R. Rosenblatt	Douglas E. Splitstone	Raymond L. Wilder
Nancy R. Mann	Bernard Ostle	Paul F. Ross	Stephen M. Stigler	John Williams
Jack A. Marshall	Vernon E. Palmour	Richard S. Ross	George P. H. Styan	William H. Williams
Harry F. Martz	Louis A. Panek	Robert A. Rutledge	D. Derk Swain	Othmar W. Winkler
John I. McCool	Takis Papaioannou	Harold B. Sackrowitz	Paul Switzer	Robert L. Winkler
Robert L. McKnight	Robert P. Parker	David S. Salsburg	Douglas B. Tang	John J. Wiorkowski
Robert A. McLean	Emanuel Parzen	Charles B. Sampson	Elliot A. Tanis	John E. Witcher
Curtis Meinert	James L. Pate	Innis G. Sande	Judith M. Tanur	Janet Wittes
Edward L. Melnick	Rusi K.N. Patell	Eberhard G. Schaich	James R. Thompson	John Harmon Wolfe
Peter F. Merenda	Ganapati P. Patil	Richard L. Scheaffer	Leo J. Tick	Donald E. Young
Paul W. Mielke	Edward B. Perrin	Robert R. Scheer	Lowell H. Tomlinson	Calvin Zippin
G. Arthur Mihram	Roger C. Pfaffenberger	David Schenker	James Tonascia	

45-49 years

Abdelmonem A. Afifi	Abdolrahman Azari	Gary L. Brager	Domenic V. Cicchetti	Gerard E. Dallal
Robert A. Agnew	Charles K. Bayne	William M. Brelsford	William S. Cleveland	James M. Davenport
Alan Agresti	Laurel A. Beckett	Robert L. Brennan	Jerry L. Coffey	Robert L. Davis
Per A. T. Akersten	Richard J. Beckman	Dwight B. Brock	Guy M. Cohen	Enrique de Alba
Arthur E. Albert	Mary S. Beersman	Mark Brown	Stanley H. Cohen	Timothy A. DeRouen
Mir Masoom Ali	Kenneth N. Berk	John A. Burkart	Kimon J.E. Constatas	Susan J. Devlin
Mukhtar M. Ali	U. Narayan Bhat	Kenneth P. Burnham	R. Dennis Cook	Jay L. Devore
Stan Altan	Peter J. Bickel	Patricia L. Busk	Lewis Coopersmith	Paula H. Diehr
Alfred Jerry Anderson	Lynne Billard	William L. Carlson	Robert J. Costello	W. Erwin Diewert
Robert L. Andrews	Christopher Bingham	Margaret D. Carroll	Bradford R. Crain	Darryl J. Downing
W. Tad Archambault	David S. Birkes	Raymond J. Carroll	Giles L. Crane	Dennis A. DuBose
Jesse C. Arnold	John A. Blessing	Walter H. Carter	John R. Crigler	Francois A. Dupuis
Ersen Arseven	Brent A. Blumenstein	Edwin H. Chen	David S. Crosby	Benjamin S. Duran
James N. Arvesen	Lennart Bodin	Raj S. Chhikara	Larry H. Crow	Danny Dyer
Orley Ashenfelter	Gordon J. Brackstone	Joseph J. Chmiel	Jonathan D. Cryer	Robert G. Easterling
Corwin L. Atwood	Edwin L. Bradley	Lee-Jay Cho	Gary R. Cutter	Brenda Kay Edwards

Longtime members

Janet D. Elashoff	Agnes M. Herzberg	Yves Lepage	J. Keith Ord	Nagambal D. Shah
Milton C. Fan	Klaus Hinkelmann	Donald Lewin	Albert C. Ovedovitz	Paul Shaman
Robert E. Fay	David C. Hoaglin	David L. Libby	Maurice E. B. Owens	Gary M. Shapiro
Walter Feibes	Theodore R. Holford	Robert G. Lovell	William J. Padgett	Ronald E. Shiffer
Alan H. Feiveson	David W. Hosmer	Stanley E. Lunde	Darrel W. Parke	Iris M. Shimizu
Alan C. Fisher	David C. Howell	Lars Lyberg	Leonard J. Parsons	Albert P. Shulte
Andrew J. Flatt	Paul B. Huber	George W. Lynch	Jon K. Peck	Robert H. Shumway
Jairus D. Flora	William F. Hunt	James R. Maar	Arthur V. Peterson	Jon J. Shuster
Sandra Forman	Frank L. Hurley	Bruce E. Mackey	Charles G. Pfeifer	Moshe Sicron
James W. Frane	Huynh Huynh	Dennis R. Mar	Eswar G. Phadia	Jagbir Singh
Daniel H. Freeman	Dar-Shong Hwang	Helen Marcus-Roberts	Louis A. Pingel	Nozer D. Singpurwalla
Mark C. Fulcomer	Ronald L. Iman	Robert L. Mason	Mike Pore	Walter Sloboda
Mitchell H. Gail	Peter B. Imrey	Takashi Matsui	Stephen L. Portnoy	Dennis E. Smith
Edward J. Gainer	William G. Jackson	Clement J. Maurath	Ross L. Prentice	Mitchell Snyder
Daniel J. Gans	David Jacobson	George P. McCabe	Philip J. Press	F. Michael Speed
Fernando L. Garagorry	F. E. James	James B. McDonald	Bertram Price	Randall K. Spoeri
John A. Gaudiosi	Sreenivasa Rao	Lyman L. McDonald	Philip C. Prorok	M. K. Srirama
Douglas O. Gause	Jammalamadaka	John D. McKenzie	Thomas W. Pullum	Muni S. Srivastava
Stephen L. George	J. D. Jobson	Glen D. Meeden	Madan L. Puri	Allan Stewart-Oaten
Gauri L. Ghai	Clifford L. Johnson	Jeff B. Meeker	David A. Pyne	Robert L. Stout
Prabhakar D. Ghangurde	Dallas E. Johnson	James I. Mellon	J. G. Ramage	Jerrell T. Stracener
Edward J. Gilroy	Richard A. Johnson	Gayle T. Meltesen	Calyampudi R. Rao	William E. Strawderman
Howard Seth Gitlow	Paul K. Jones	William L. Mietlowski	George F. Reed	Nariaki Sugiura
John R. Gleason	John D. Kalbfleisch	George A. Milliken	Benjamin Reiser	Moon W. Suh
T. F. Glover	John H. Kalbfleisch	Satish Chandra Misra	Louise C. Remer	Michael Sutherland
Prem K. Goel	Balvant K. Kale	Robert Mondschein	Richard D. Rippe	Aaron Tenenbein
Judith D. Goldberg	William D. Kalsbeek	Douglas C. Montgomery	Bernard Rosner	Ronald A. Thisted
Robert N. Goldman	Howard S. Kaplon	Roderick Montgomery	Donald C. Ross	Carol B. Thompson
J. Douglas Gordon	Joseph D. Kasile	Billy J. Moore	Donald B. Rubin	Steven F. Thomson
Louis Gordon	Myron J. Katzoff	David S. Moore	Barbara J. Rutledge	Ram C. Tripathi
Bernard S. Gorman	Thomas Keefe	John K. Moore	Julia Sabella	Bruce W. Turnbull
David M. Grether	David L. Kimble	John K. Moore	Susan T. Sacks	Neil R. Ullman
William E. Griffiths	Roger E. Kirk	Effat A. Moussa	Francisco J. Samaniego	Gerald van Belle
Joseph A. Guarnieri	David C. Korts	Govind S. Mudholkar	Douglas A. Samuelson	Joseph G. Van Matre
Richard F. Gunst	Neal Koss	Robb J. Muirhead	Patricia D. Saunders	Lonnie C. Vance
Shelby J. Haberman	Helena C. Kraemer	Henry D. Muse	James J. Schlesselman	Wayne F. Velicer
Hermann Habermann	Richard J. Kryscio	Wayne L. Myers	Joyce A. Schlieter	Paul F. Velleman
Robert E. Hale	Arabinda Kundu	Subhash C. Narula	Josef Schmee	Hrishikesh D. Vinod
Silas Halperin	Lynn Roy LaMotte	Glenn L. Nelson	James Schmeidler	R. Lakshmi
Chien-Pai Han	Kenneth C. Land	Anna B. Nevius	William R. Schucany	Vishnuvajjala
R. Choudary Hanumara	James M. Landwehr	S. Edward Nevius	Eugene F. Schuster	Kenneth W. Wachter
Lynne B. Hare	Per Lange	David S. Newman	Neil C. Schwertman	Sylvan Wallenstein
Larry D. Haugh	Kinley Larntz	Earl Nordbrock	Stuart Scott	George H. Wang
Robert M. Hauser	William D. Lawing	Julia A. Norton	Nell Sedransk	James F. Ward
Douglas M. Hawkins	Jerald F. Lawless	Marija J. Norusis	Subrata K. Sen	James H. Ware
William F. Heiland	Anthony James Lawrence	Robert L. Obenchain	Jolayne W. Service	Edward J. Wegman
Karl W. Heiner	Kenneth D. Lawrence	Peter C. O'Brien	Jayaram Sethuraman	Lynn Weidman
Robert W. Hertz	Russell V. Lentz	Jerry L. Oglesby	Juliet Popper Shaffer	Sanford Weisberg
		Leonard Oppenheimer		K. Laurence Weldon

James P. Whipple
Owen Whitby
David G. Whitmore

George W. Williams
Douglas A. Wolfe
Robert F. Woolson

Gooloo S. Wunderlich
Morty Yalovsky
Ann Graham Zauber

Eric R. Ziegel
Stuart O. Zimmerman

40-45 years

Dennis Aaron
Robert D. Abbott
Sandra C. Abbott
John M. Abowd
Bovas Abraham
Judith Abrams
Lee R. Abramson
C. J. Adcock
Frances J. Adox
Robert W. Aldred
Francis B. Alt
Dallas W. Anderson
Keaven M. Anderson
Robert J. Anderson
Sharon Anderson
Bengtung Ben Ang
Lawrence Annable
Steve Ascher
Taka Ashikaga
Anthony C. Atkinson
Agustin F. Ayuso
Stephen P. Baker
Saad T. Bakir
Vincent P. Barabba
William A. Barnett
John L. Barone
Michael P. Battaglia
Eileen J. Beachell
Patricia C. Becker
Richard A. Becker
Jay H. Beder
Steven Belle
Robert B. Bendel
James O. Berger
Roger L. Berger
Timothy M. Bergquist
James S. Bergum
Catherine S. Berkey
Jose Miguel Bernardo
Ernst R. Berndt
David J. Bernklau

Bibhuti B. Bhattacharyya
Wayne F. Bialas
William T. Bielby
Paul P. Biemer
Robert H. Bigelow
Richard A. Bilonick
Jeffrey B. Birch
Herbert L. Bishop
Richard M. Bittman
Jan F. Bjornstad
Mark M. Blanchard
Peter Bloomfield
Harvey Blumberg
Dan C. Boger
Robert J. Boik
James A. Bolognese
Dennis Boos
Marie V. Bousfield
John E. Boyer
Norman M. Bradburn
Ellen F. Brewer
J. Michael Brick
David R. Bristol
Ron Brookmeyer
Dean S. Bross
Rocco L. Brunelle
Edward C. Bryant
Richard K. Burdick
John M. Bushery
Thomas J. Bzik
Lawrence S. Cahoon
Patrick J. Cantwell
Grant D. Capps
Arthur Carpenter
Daniel B. Carr
Frank C. Castronova
Amrut M. Champaneri
John P. Chandler
Judith-Anne W. Chapman
Yogendra P. Chaubey
Gina G. Chen

Michael R. Chernick
Nanjamma Chinnappa
Joan Sander Chmiel
Jai Won Choi
George W. Cobb
Timothy C. Coburn
Steven B. Cohen
James J. Colaianne
John R. Collins
Salvatore V. Colucci
Kennon R. Copeland
Margaret D. Copenhaver
Charles D. Cowan
Brenda G. Cox
Andrew Joseph Cucchiara
William G. Cumberland
L. Adrienne Cupples
Robert D. Curley
Andrew I. Dale
Prithwis Dasgupta
Roberta W. Day
Michael L. Deaton
Pierre C. Delfiner
David L. DeMets
Lorraine Denby
Wayne S. Desarbo
Thomas F. Devlin
E. Jacquelin Dietz
David P. Doane
Allan P. Donner
Joseph R. Donovan
Janice L. Dubien
Joseph W. Duncan
William D. Dupont
L. Marlin Eby
Marlene J. Egger
Kathleen Louise Emery
Wil B. Emmert
Curtis S. Engelhard
Thomas W. Epps
Samuel M. Epstein

William H. Epstein
Eugene P. Ericksen
James W. Evans
Michael J. Evans
Ray E. Faith
Thomas B. Farver
Alan Fask
John P. Fazio
Ronald S. Fecso
Martin Feuerman
David F. Findley
Carl Thomas Finkbeiner
Nicholas I. Fisher
Allen I. Fleishman
Nancy Flournoy
Hans-Theo Forst
Peter E. Fortini
Mary A. Foulkes
Janet F. Fowler
John D. Fox
Leroy A. Franklin
Martin D. Fraser
David Frontz
Barbara A. Gabianelli
Stephen J. Ganocy
Turkan K. Gardenier
Edward E. Gbur
Robin T. Geiger
Alan E. Gelfand
Fredric C. Genter
Cynthia D. Gentillon
Malay Ghosh
David E. Giles
Phyllis A. Gimotty
Dennis R. Givens
Beth C. Gladen
Marcia A. Glauberman
Joseph Glaz
Avni Goeksel
Richard F. Goldstein
Joe Fred Gonzalez
James H. Goodnight

Robert D. Gordon
Stephanie J. Green
Timothy A. Green
William H. Greene
Joel B. Greenhouse
John Vic Grice
Susan Groshen
Marvin H. J. Gruber
Leslie S. Grunes
Victor M. Guerrero
Perry D. Haaland
Timothy O. Haifley
David B. Hall
James L. Hall
Nancy R. Hall
David C. Hamilton
Janet M. Hanley
Robert C. Hannum
David Hardison
William V. Harper
Frank E. Harrell
Stephen P. Harris
Kenneth R. Hartmann
Maurine A. Haver
Ronald W. Hawkinson
Richard M. Heiberger
Lance K. Heilbrun
Harold V. Henderson
Ellen Hertzmark
Thomas Herzog
James L. Hess
Eugene R. Heyman
James J. Higgins
Steven C. Hillmer
Susan M. Hinkins
Jerry L. Hintze
Raymond G. Hoffmann
Thomas P. Hogan
Alan Hopkins
Berne Martin Howard
Ina P. Howell
Elizabeth T. Huang

Longtime members

Marla L. Huddleston	Mansum A. Lam	Michael J. Mazu	Melvin L. Ott	N. Phillip Ross
Mark Hudes	Carol J. Lancaster	Janet Elizabeth McDougall	Willis L. Owen	Lawrence V. Rubinstein
Mohammad F. Huque	J. Richard Landis	Stephen A. McGuire	Mari Palta	David Ruppert
David N. Ikle	Nicolaas F. Laubscher	Joseph W. McKean	William S. Pan	Estelle Russek-Cohen
Duane M. Ilstrup	Philip T. Lavin	Geoffrey J. McLachlan	Swamy A.V.B. Paravastu	Carl T. Russell
John M. Irvine	Sheila M. Lawrence	Christine E. McLaren	Won J. Park	Thomas P. Ryan
Alan J. Izenman	Johannes Ledolter	Don L. McLeish	Rudolph S. Parrish	Michael S. Saccucci
Allen E. Izu	Kelvin K. Lee	William Q. Meeker	Van L. Parsons	Thomas W. Sager
Kirk A. Jackson	Kerry L. Lee	Cyrus R. Mehta	Jeffrey S. Passel	John P. Sall
William E. Jackson	Martin L. Lee	Robert J. Meier	Kevin Pate	William M. Sallas
David Jaspen	James D. Leeper	Kathleen A. Mellars	Charles L. Paule	Allan R. Sampson
Jean G. Jenkins	Stanley A. Lemeshow	Roy Mendelssohn	Karl E. Peace	Gilles F. M. Santini
Linda W. Jennings	Heryee H. Leong	Michael M. Meyer	N. Shirlene Pearson	Thomas J. Santner
Robert W. Jernigan	James M. Lepkowski	Terry G. Meyer	Raymond C. Peck	Robert L. Santos
Bruce E. Johnson	Trudy J. Lerer	Joel E. Michalek	Peter H. Peskun	Nathan E. Savin
Paulette M. Johnson	Martin L. Lesser	Richard O. Michaud	A. John Petkau	Richard L. Sawyer
Gerald A. Joireman	Marcia J. Levenstein	Mary-Jane Mietlowski	Daniel Pfeffermann	William G. Saylor
Ian T. Jolliffe	Bruce Levin	John A. Miller	John G. Phillips	Patricia A. Scanlan
David C. Jordan	Charles Lewis	John Francis Monahan	Philip J. Pichotta	Stephen Schacht
Harmon S. Jordan	Shou-Hua Li	Katherine L. Monti	Linda Williams Pickle	Nancy K. Schatz
Henry D. Kahn	Walter S. Liggett	Thomas F. Moore	Joseph G. Pigeon	Kenneth Schechtman
Lee D. Kaiser	Lawrence I-Kuei Lin	George E. Morgan	Dale J. Poirier	Mildred E. Schmidt
Theodore G. Karrison	Carol L. Link	David R. Morganstein	William E. Pollard	David A. Schoenfeld
Daniel Kasprzyk	Robert E. Little	Max D. Morris	Darwin H. Poritz	Timothy L. Schofield
Richard W. Katz	George A. Livingston	Barbara G. Mroczkowski	Frank J. Potter	Friedrich W. Scholz
Robert M. Katz	Greta M. Ljung	Lawrence H. Muhlbaier	Randall W. Potter	John H. Schuenemeyer
Sheryl F. Kelsey	Roger Longbotham	Leigh W. Murray	Manfred Precht	Donald J. Schuirmann
James L. Kenkel	Michael T. Longnecker	John C. Nash	Dale L. Preston	Alastair John Scott
James L. Kepner	Thomas A. Louis	Elliott Nebenzahl	Kevin Price	William L. Seaver
Andre I. Khuri	Milton W. Loyer	Reinhard Neck	Lloyd P. Provost	Joseph Sedransk
Byung-Soo Kim	Jay H. Lubin	Gary L. Neidert	John N. Quiring	Teddy I. Seidenfeld
Ignatius A. Kinsella	Donald M. Luery	James W. Neill	Tony K. S. Quon	Thomas R. Sexton
Nancy J. Kirkendall	James Lynch	Margaret A. Nemeth	Alfred W. Rademaker	Glenn R. Shafer
Syed N.U.A. Kirmani	John MacIntyre	H. Joseph Newton	Volker W. Rahlfs	Arvind K. Shah
Rudolf G. Kittlitz	Michael E. Mack	El-Sayed E. Nour	Philip H. Ramsey	Mohammed A. Shayib
Beat Kleiner	Kathleen S. Madsen	Thomas S. Nunnikhoven	Gopa Ray	Shingo Shirahata
Stuart A. Klugman	Jay Magidson	Barry D. Nussbaum	Rose M. Ray	Patrick E. ShROUT
Kenneth J. Koehler	Linda C. Malone	David Oakes	William J. Raynor	Andrew F. Siegel
Edward L. Korn	Charles F. Manski	Kevin F. O'Brien	Kenneth J. Resser	Richard S. Sigman
Kenneth J. Koury	Kanti V. Mardia	Ralph G. O'Brien	Mark William Riggs	Judith D. Singer
Abba M. Krieger	Mary A. Marion	Michael W. O'Donnell	Paula K. Roberson	Robert D. Small
S. David Kriska	Ray L. Marr	Judith Rich O'Fallon	Rosemary A. Roberts	Martyn R. Smith
Pieter M. Kroonenberg	David B. Marx	Walter W. Offen	Jeffrey A. Robinson	Murray H. Smith
Naoto Kunitomo	Donald L. Marx	Patrick D. O'Meara	Frank W. Rockhold	William A. Sollecito
Robert Kushler	Victor M. Matthews	Bernard V. O'Neill	Robert N. Rodriguez	Dan J. Sommers
Alan H. Kvanli	LeRoy T. Mattson	Terence John O'Neill	Russell H. Roegner	Keith A. Soper
John M. Lachin	Timothy A. Max	Joyce Orsini	John E. Rolph	Terence P. Speed
James R. Lackritz	Margaret W. Maxfield		Paul R. Rosenbaum	Bruce D. Spencer
Nan Laird	Scott E. Maxwell		James L. Rosenberger	Clifford H. Spiegelman

Nancy L. Spruill	Gerald R. Swope	Kam-Wah Tsui	Katherine K. Wallman	Rand R. Wilcox
Donald M. Stablein	Ajit C. Tamhane	Alan R. Tupek	Stephen D. Walter	Leland Wilkinson
William M. Stanish	Robert M. Tardiff	David L. Turner	Chao Wang	Jean F. Williams
Richard M. Stanley	Erica S. Taucher	Gregory W. Ulferts	Sophonria W. Ward	Stephen R. Williams
Robert R. Starbuck	Marcia A. Testa	Jessica M. Utts	Herbert W. Ware	William J. Wilson
David W. Stewart	A. Cole Thies	Pamela M. Vacek	Stanley Wasserman	Michael A. Wincek
Gerald R. Stewart	Hanspeter Thoeni	Richard L. Valliant	William L. Weber	Lawrence C. Wolfe
John A. Stewart	John M. Thomas	Richard Craig Van Nostrand	William E. Wecker	Kirk M. Wolter
Robert A. Stine	John H. Thompson	Kerstin Vannman	Thomas E. Wehrly	Wayne A. Woodward
Sandra S. Stinnett	Mary E. Thompson	Stephen B. Vardeman	William W. S. Wei	Farroll T. Wright
Michael A. Stoto	Theodore J. Thompson	Denton R. Vaughan	Daniel L. Weiner	Tommy Wright
Miron L. Straf	Richard B. Tiller	Niels H. Veldhuijzen	Jon August Wellner	Marvin Yablon
Donna F. Stroup	Ronald R. Titus	Joseph S. Verducci	Roy E. Welsch	Michael G. Yochmowitz
Walter W. Stroup	Jerome D. Toporek	Hajime Wago	Fredrick S. Whaley	Sarah T. Young
Perla Subbaiah	Robert D. Tortora	Grace Wahba	Robert M. Wharton	Daniel Zelterman
Richard A. Sundheim	David C. Trindade	Joel A. Waksman	Andrew A. White	James R. zumBrunnen
Robert Sutherland	J.R. Roger Trudel	Joseph J. Walker	Roy W. Whitmore	
David A. Swanson	L. Claire Tsao		Howard L. Wiener	

35-39 years

Michael A. Adena	James A. Baldwin	H. Christine Bourquin	Raymond L. Chambers	Michael P. Cohen
Joseph Adwere-Boamah	David L. Banks	Robert D. Bowser	Charles W. Champ	Michael L. Cohen
Dennis P. Affholter	Thomas A. Bass	Michael N. Boyd	Promod K. Chandhok	Stephen H. Cohen
Mohammad Ahsanullah	Karin M. Bauer	Nancy J. Boynton	Richard A. Chechile	Richard Daniel Cohn
Adelin I. Albert	Andrew Lewis Baughman	Rollin F. Brant	Chen-Hsin Chen	Hans Colonius
James H. Albert	Moraye B. Bear	Mary-Lynn Brecht	James J. Chen	Charles F. Contant
Jeanne M. Aldred	Mark P. Becker	James E. Breneman	William W.S. Chen	Richard S. Conway
Melvin T. Alexander	Paula J. Beitler	Thomas W. Broene	Ching-Shui Cheng	Bruce K. Cooil
Rich Allen	Alexander E. Belinfante	Roger L. Brown	Richard P. Chiacchierini	Nancy R. Cook
Paul D. Allison	Michael E. Bellow	Judith A. Buchino	Yu-Kun Chiang	Peyton J. Cook
Wendy L. Alvey	Julia L. Benson	Shelley B. Bull	Vernon M. Chinchilli	Patricia S. Costello
W. Gregory Alvord	Peter M. Bentler	Christine M. Bunck	Paul C. Chiou	Lawrence H. Cox
Yasuo Amemiya	Nancy Berman	Lawrence F. Burant	Youn-Min Chou	John R. Crammer
John Angle	Debra H. Bernstein	Thomas E. Burk	Ronald Christensen	Keith N. Crank
Clifford W. Angstman	Charles C. Berry	Harry F. Bushar	Peter D. Christenson	James A. Creiman
Thomas Arbutiski	James Calvin Berry	Richard J. Caplan	Tin Chiu Chua	Noel A. Cressie
Susanne Aref	Jonas V. Bilenas	David A. Carlin	Christy Chuang-Stein	Douglas E. Critchlow
Vincent C. Arena	Thomas E. Billings	Lynda T. Carlson	Constance F. Citro	Leonard A. Cupingood
Stephan Arndt	Thomas R. Birkett	B. Thomas Carr	B. Christine Clark	Estella Bee Dagum
Arlene S. Ash	David K. Blough	John F. Carter	Cynthia Z.F. Clark	Robin A. Darton
Tim Baer	David K. Blough	Nancy J. Carter	Murray K. Clayton	Marie Davidian
Jenny A. Baglivo	Carol Joyce Blumberg	L. Douglas Case	Daren B. H. Cline	Bruce M. Davis
John Bailer	Douglas G. Bonett	Aki N. Caszatt	Avital Cnaan	Charles S. Davis
Steven P. Bailey	David E. Booth	Deborah A. Cernauskas	Paul E. Coffman	Richard A. Davis
	Richard C. Borden	Subhabrata Chakraborti	Mark E. Cohen	Roger B. Davis
	Victor Marek Borun			

Longtime members

Thomas M. Davis	Arthur Fries	Wolf-Dieter Heller	Joseph L. Katz	Stephen W. Looney
Willis L. Davis	Shayne C. Gad	David H. Henry	Jerome P. Keating	James T. Love
Thomas C. Dawe	Paul Gallo	Michael Hesney	Sallie Keller	Joseph F. Lucke
Virginia A. de Wolf	Michael A. Gates	Richard P. Heydorn	Elizabeth J. Kelly	Helmut Luetkepohl
Angela M. Dean	Constantine Gatsonis	Susan G. Hilsenbeck	Joan Kempthorne-Rawson	Michael J. Luvalle
Roger L. Deaton	Jeffrey J. Gaynor	Chihiro Hirotsu	Arthur J. Kendall	Michael F. Macaluso
Michael R. Delozier	Philip M. Gbur	Joseph G. Hirschberg	Harry J. Khamis	Stephen P. Mack
Richard A. Derrig	Joseph C. Gfroerer	Edward C. Hirschland	KyungMann Kim	David Peter Mackinnon
Jeanne A. Devin	Subir Ghosh	Douglas A. Hlavacek	John E. Kimmel	Donald Macnaughton
Marie Diener-West	John A. Gillespie	Myron Hlynka	Robin Laurence Kirby	Laurentius Marais
Ralph Digaetano	Michael E. Ginevan	Lorrie L. Hoffman	Genshiro Kitagawa	Mervyn G. Marasinghe
Thomas W. Dobbins	William J. Glynn	Howard R. Hogan	John C. Klensin	James C. March
John E. Donmyer	A. Blanton Godfrey	Larry R. Holden	George J. Knafl	Sue M. Marcus
Gerald A. Dorfman	Alfred D. Godfrey	Paul S. Horn	Henryka K. Komanska	David A. Marker
Gaylen W. Drape	Susan C. Goebel	Carol C. House	David P. Kopcso	Paul J. Marovich
Kevin Ward Drummey	Miguel A. Gomez-Villegas	Wei-Min Huang	Samuel Koslowsky	James Martin
Bonnie P. Dumas	Nancy M. Gordon	Esther Sid Hudes	Kallappa M. Koti	Adam T. Martinsek
Charles L. Dunn	Barry I. Graubard	Arthur L. Hughes	Ken G. Kowalski	Michael P. Massagli
Harold E. Dyck	J. Brian Gray	Edward Hughes	Lawrence Krasnoff	Joe Matsuoka
Jean L. Dyer	Janis G. Grechko	Allen C. Humbolt	Jeffrey P. Krischer	Carl A. Mauro
Kirk A. Easley	Edwin J. Green	Luis H. Hurtado	Alok Krishen	Fred M. Mayes
Jeffrey H. Ebersole	John W. Green	Deborah D. Ingram	Katherine B. Krystinik	Charles Maynard
Robert G. Edson	Daniel A. Greer	Henry F. Inman	Richard A. Kulka	Paul R. McAllister
Don Edwards	James A. Grimes	Patricia A. Jacobs	Lynn Kuo	Donna K. McClish
Thomas Barry Edwards	David J. Groggel	Paul D. James	Edward Lakatos	Joseph P. McCloskey
Bruce P. Ekholm	Shulamith T. Gross	Denis George Janky	Kuang-Kuo Gordon Lan	Kenneth F. McCue
Paul J. Elson	Berton H. Gunter	Guillermina Jasso	Jurate M. Landwehr	Peter McCullagh
John D. Emerson	Ramesh C. Gupta	Christopher Jennison	Jerry Langley	Daniel L. McGee
Patricia A. English	Yesvy Gustasp	Herbert Y. Jew	Stephen S. Langley	Philip G. McGuire
Eugene A. Enneking	Sam Gutterman	Karl-Heinz Jockel	Linda B. Lannom	Raymond E. McIntyre
Neil R. Ericsson	Josue Guzman	B. Alan Johnson	Lisa M. LaVange	Kenneth B. McRae
Kent M. Eskridge	Michael Haber	Gary R. Johnson	Barbara A. Leczynski	Shailendra S. Menjoge
Mark A. Espeland	Michael D. Hale	LuAnn K. Johnson	Hyunshik J. Lee	Michael Meredith
Sylvia R. Esterby	Marc Hallin	Robert E. Johnson	Kwan R. Lee	Samuel Merrill
David Fairley	William A. Halteman	Albyn C. Jones	John J. Lefante	Marianne E. Messina
Frederick W. Faltin	Katherine T. Halvorsen	Karen C. Jones	Robert George Lehr	R. Daniel Meyer
Dean H. Fearn	Michael S. Hamada	Michael P. Jones	Greg M. Lepak	H. Andrew Michener
Michael B. Feil	Herbert Hamilton	Shelton M. Jones	Donald K. Lewis	Rosemarie Mick
Luisa T. Fernholz	John B. Hannon	David R. Judkins	Richard A. Lewis	William E. Mihaló
G. Donald Ferree	J. Michael Hardin	Karen Kafadar	Steven A. Lewis	Eva R. Miller
Christopher A. Field	Jeffrey D. Hart	Leslie A. Kalish	Wai K. Li	Michael F. Miller
Dianne M. Finkelstein	Rachel M. Harter	Tzu-Cheg Kao	Lillian S. Lin	Renee H. Miller
Patrick E. Flanagan	Nancy C. Hassett	Roxanne Kapikian	Wayne S. Lindsay	David H. Moen
T. A. Foster	Trevor J. Hastie	Bruce A. Kaplan	Barbara A. Lingg	Leyla K. Mohadjer
Anne E. Freeny	Gary D. Hatfield	John M. Karon	Charles L. Liss	Donna L. Mohr
Larry D. Freese	William D. Heavlin	Charles R. Katholi	Jen-Pei Liu	Robert J. Mokken
Stephen A. Freitas	Charles E. Heckler	Barry P. Katz	Wei-Yin Loh	Leslie M. Moore
Frederick L. Freme		Darryl Katz		Walter T. Morgan

Longtime members

Elizabeth A. Morgenthien	Robert A. Parker	Gary L. Rosner	Mark R. Shenkman	David M. Thissen
June Morita	Jeffrey R. Parno	Peter J. Rousseeuw	Malcolm J. Sherman	Neal Thomas
Christopher H. Morrell	Robert E. Parson	Andrew L. Rukhin	Weichung J. Shih	Peter James Thomson
David T. Morse	Lee Parsons	George C. Runger	Lucy Shneyer	Anthony D. Thrall
Michael J. Morton	Sharon M. Passe	Keith F. Rust	Gary L. Shoop	Luke-Jon Tierney
Linda L. C. Moss	Robert J. Pavur	Roland T. Rust	Stanley A. Shulman	Naitee Ting
Tetsuro Motoyama	Roxy L. Peck	Steven W. Rust	Arthur R. Silverberg	Ruey-Shiong Tsay
Mohamed Ahmed Amin Moussa	Jane F. Pendergast	Jim Rutherford	Jeffrey S. Simonoff	Siu-Keung Tse
Ronald P. Mowers	Elgin S. Perry	Pedro J. Saavedra	Terry L. Sincich	Clyde Tucker
Daniel H. Mowrey	Kimberly T. Perry	William H. Sachs	Douglas R. Sizemore	Thomas P. Turiel
Nitis Mukhopadhyay	John D. Pesek	Jerome Sacks	Christopher John Skinner	Thomas J. Uryniak
Keith E. Muller	David W. Peterson	Mehmet Sahinoglu	Joan H. Skurnick	Esa Ilkka Uusipaikka
Alvaro Munoz	John J. Peterson	Ulderico Santarelli	Charles Eugene Smith	Mark J. VanRaden
Jay Munson	Joseph D. Petrucci	Michael J. Santulli	Elizabeth C. Smith	Steven J. Verhulst
Bengt Muthen	Gerald L. Phillips	Adriano L. Sarmiento	Richard J. Smith	Steve P. Verrill
Haikady N. Nagaraja	Walter W. Piegorsch	Miles M. Sato	Richard L. Smith	Joseph G. Voelkel
Jayalakshmi Natarajan	Gregory F. Piepel	John W. Sawyer	Robert A. Smith	Robert L. Vogel
William Navidi	Chester H. Ponikowski	Stephen M. Scariano	Stephen J. Smith	Joachim Vollmar
Larry Alan Nelson	Dudley L. Poston	David J. Schaeffer	Tom A.B. Snijders	Edward F. Vonesh
Dean V. Neubauer	Paul N. Powell	Daniel W. Schafer	Karen L. Snowdon-Way	Howard Wainer
Tie-Hua Ng	J. Michael Price	Nathaniel Schenker	Ying C. So	Paul G. Wakim
Truc Truong Nguyen	Louis H. Primavera	Mark J. Schervish	Jose Francisco Soares	Lars Walloe
Joyce C. Niland	Howard M. Proskin	Mark F. Schilling	Francisco P. Soler	Chai-Ho C. Wang
David Butcher Nolle	Jamie K. Pugh	Brian R. Schlain	Eric R. Sower	Ann E. Watkins
Michael A. Nolte	William M. Pugh	David C. Schlotzhauer	Floyd W. Spencer	Carol Weideman
Phillip N. Norton	Clifford R. Qualls	Mark D. Schluchter	John J. Spinelli	David L. Weimer
Robert M. Norton	James O. Ramsay	Paul R. Schneeman	Gene D. Sprechini	Clarice R. Weinberg
Douglas W. Nychka	Dabeeru C. Rao	Daniel James Schnell	Kadaba P. Srinath	William J. Welch
Thomas W. O'Gorman	Richard F. Raubertas	John R. Schoenfelder	Edward J. Stanek	James G. Wendelberger
Francis G. Ogrinc	Howard L. Rauch	John D. Schoolfield	Joel H. Steckel	Joanne R. Wendelberger
William P. O'Hare	Domenic J. Reda	Donald E. Schreiner	Leonard A. Stefanski	Glenn D. White
Akinori Ohashi	Nancy Reid	Charles B. Schriver	Seth M. Steinberg	David C. Whitford
Noboru Ohsumi	William K. Rice	Linda Kay Schultz	Lorraine C. Steiner	David A. Whitney
Thomas H. Oliphant	Wasima N. Rida	Phyllis A. Schumacher	Barbara Stevens	Dexter C. Whittinghill
Frank Olken	William J. Riley	Steven J. Schwager	David S. Stoffer	Priya J. Wickramaratne
John A. Ondrasik	James S. Roberts	Lawrence A. Schwartz	Maura E. Stokes	Christopher John Wild
George Ostrouchov	Edwin L. Robison	Sidney H. Schwartz	S. Lynne Stokes	William E. Wilkinson
Soo Peter Ouyang	David M. Rocke	Michael Schwarzschild	Mark C. Strong	Thomas R. Willemain
William J. Owen	Richard A. Rode	James R. Schwenke	Mark Lionel Suda	Jeffrey R. Wilson
Albert Palachek	Mark H. Rodeffer	David W. Scott	Stephen R. Sulpor	William E. Winkler
Alberto Palloni	Jack Rodgers	Joanne B. Severe	James J. Swain	Luke G. Wolfe
J. Lynn Palmer	Ward Rodriguez	Joseph Severs	Yoshio Takane	Glenn S. Wolfgang
Deborah L. Panebianco	Nestor Rohowsky	Bahman Shafii	Roy Noriki Tamura	F. Lennie Wong
Sastry G. Pantula	Javier Rojo	Ramalingam Shanmugam	Deborah L. Tasky	John Charles Wurst
Corette Breeden Parker	Anthony M. Roman	Steven J. Shapiro	Robert L. Taylor	Emmanuel Yashchin
Mary R. Parker	Elvezio Ronchetti	Mack C. Shelley	George R. Terrell	Linda J. Young
	Robin L. Rose	John T. Shelton	Brian J. Thelen	Elizabeth R. Zell



Photo by Emanuel Saavedra

Leonard Smith, Rep. Ileana Ros-Lehtinen (R-FL), Robert Corell, and Steve Pierson met to discuss climate science research and climate change impacts in February.

ASA Participates in Sixth Climate Science Day

Steve Pierson, ASA Director of Science Policy

Two members of the ASA Advisory Committee on Climate Change Policy (ACCCP) participated in the sixth annual Climate Science Day (CSD) in February. Leonard Smith of the London School of Economics and Pembroke College, Oxford, completed his sixth CSD and Daniel Cooley of Colorado State University his first.

Smith and Cooley were among 22 scientists participating in 80 meetings with members of Congress or, more likely, their staff about their climate science research and climate change impacts possible for the state or congressional district. The participants, who were partnered with a scientist of another discipline for their day of meetings, also offered themselves as resources on any climate science questions.

Unlike most congressional visits days, CSD does not have a policy ask such as to support a certain bill or budget. Instead, the ask is that they consult one of the scientists or participating societies when they have a climate science question. For this year's event, the message that science societies agree climate change is happening, with human activity being almost certainly the primary driver, was made more explicit. In the past, this message was implicit, with a 2009 letter signed by the heads of 18 science organizations (<http://bit.ly/1X9Np98>) included in the leave-behind packet.

CSD is sponsored and organized by the Climate Science Working Group, which is comprised of 20 professional associations and other scientific organizations. To prepare for the meetings, the participants heard from a variety of speakers—including two

Senate staffers—the afternoon prior about the CSD message and how to conduct an effective meeting. The preparation has also traditionally included a climate science communications expert. This year's expert, Katherine Hayhoe of Texas Tech University, gave her talk, "Talking Climate: Why Facts Are Not Enough," by webinar (<http://bit.ly/1UPNy2X>).

Participants and the science society professionals noted two encouraging developments in the U.S. House of Representatives on climate change, which is generally a polarizing issue. One was the formation of the Bipartisan Climate Caucus, which was announced the day of the CSD briefing and headed by Rep. Carlos Curbelo (R-FL) and Rep. Ted Deutch (D-FL). Smith's team met with staff for both offices and learned the new caucus plans to start out with four Republicans and four Democrats and emphasize informational briefings relating to climate change impacts. For any member to join the caucus, he or she will have to find a member of the other party with whom to join.

The other development was the 2015 Environmental Stewardship Resolution 424, sponsored by Rep. Chris Gibson (R-NY) and 11 fellow Republicans expressing "the commitment of the House of Representatives to work constructively on creating and supporting economically viable and broadly supported solutions to measured changes in global and regional climates."

For more information about CSD, contact ASA Director of Science Policy Steve Pierson at pierson@amstat.org. ■

ASA LEADERS REMINISCE

Nancy Geller

James Cochran

In the sixteenth installment of the Amstat News series of interviews with ASA presidents and executive directors, we feature a discussion with 2011 ASA President Nancy L. Geller.

Q All your degrees are in mathematics. How then did you become a biostatistician?

A I majored in math at The City College of New York (CCNY), where I took and really liked probability theory. I applied to graduate schools with the intent of doing a PhD in probability theory, but almost all the activity at that time was in math departments. In graduate school, I had been told that if I wanted to study probability theory, I also had to study statistics, and so I did, and my thesis was on the distribution of test statistics of the Kolmogorov-Smirnov type.

After my PhD, my first faculty position was at the University of Rochester's Department of Statistics, which cemented my love for statistics. I then became an assistant professor in the statistics department at the University of Pennsylvania. That department is in the Wharton School, and business and economics was never my interest. After a few years at Penn, I moved across town to be the biostatistician at the Medical College of Pennsylvania. If they knew how little biostatistics I knew, they probably wouldn't have hired me! But certainly my PhD trained me to educate myself, so I was able to study biostatistics—specifically survival analysis—on my own. The position was a lonely one and, after one year, I took the opportunity to move to Memorial Sloan-Kettering Cancer Center to have statistical, as well as, medical colleagues. That's when I became a real biostatistician!

Q What did you initially find most attractive about the opportunity to join the National Heart, Lung, and Blood Institute, or NHLBI, at the National Institutes of Health?

A After 10 years at Sloan-Kettering, I was interested in trying something new. The biostatistics group at the National Heart, Lung, and Blood Institute had a long and illustrious history of leadership in the field. The opportunity to lead it was an honor I found compelling and still do after many years.

Q What do you find most rewarding in your current position as director of the Office of Biostatistics Research with the NHLBI?

A I find participating in medical research quite compelling. At NHLBI, there are always new



Nancy L. Geller has been the director of the Office of Biostatistics Research at the National Heart, Lung, and Blood Institute of the National Institutes of Health since 1990. She directs a group of 12 statisticians who collaborate in the design, implementation, monitoring, and analysis of multicenter clinical trials in heart, lung, and blood diseases and sleep disorders. She also administers all statistical activities of the National Heart, Lung, and Blood Institute. She has been and continues to be involved in the design and analysis of a number of large cardiovascular and hematopoietic stem cell transplantation trials, including the Women's Health Initiative clinical trial of hormone replacement therapy, the Action to Control Cardiovascular Risk in Diabetes or ACCORD trial, and several multiple myeloma trials.

Geller has published more than 200 papers in the statistical and medical literature. She is an associate editor of *Biometrics* and a fellow of both the American Statistical Association and the International Statistics Institute. She was the winner of the 2009 Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences and 2011 president of the American Statistical Association.

challenges and opportunities to learn new things, both about statistics and medicine. And it is amazing and thrilling how smart everyone around me is! I also enjoy mentoring my junior colleagues.

Q **Mentoring of statisticians early in their careers is critical to their professional success, especially in a nonacademic setting. How does the NHLBI handle mentoring of its early career statisticians? As director of the Office of Biostatistics Research with the NHLBI, have you established mentoring programs for the statisticians you bring into your office?**

A I mentor many people, but particularly my junior colleagues. When someone joins the Office of Biostatistics Research, they are mentored by more than one more experienced member of our group. Often I do a project with them, but since different people have different styles and personalities, it is important that new members of the group do a project with others, as well. Mentoring is thus quite informal, and everyone knows they can ask questions of others in the group. We also have a research seminar that meets regularly with presentations both by outsiders and members of our group. This fosters an open learning environment and the sharing of research ideas.

Q **In your presidential address at the 2011 Joint Statistical Meetings in Miami Beach, you stated, “A unique feature of being a statistician is that you may collaborate in any discipline whatsoever, and you may change fields of application as occasions arise.” You then emphasized that this results in statisticians being unique in seeking out collaborators and interdisciplinary opportunities, which in turn requires us to develop skills that will enable our colleagues in other disciplines to understand and appreciate our contributions. Do you feel that practitioners of our discipline are improving with respect to these skills?**

A I’ve already mentioned that I switched from business to biostatistics and, within biostatistics, from cancer to heart, lung, and blood diseases. That was quite deliberate, but sometimes you initiate collaborations by serendipity. After getting to NHLBI, I remember thinking that before I could talk to the clinicians, I had better learn the new vocabulary. I found myself unable to speak in sentences, never mind paragraphs. The first challenge I set for myself was to say atherosclerosis without stuttering! Then I progressed to sentences, and then to paragraphs. It’s very hard to initiate collaboration if you don’t know the terminology that the potential collaborator uses every day. I just presented a paper at a journal club

that concerned assessing accrual in clinical trials. Those authors could have improved their paper if only they had a biostatistical collaborator! While I could initiate collaboration with these authors, it is more likely that I collaborate with colleagues at NHLBI about this topic. As for whether our colleagues are improving with respect to these skills, graduate programs in biostatistics today are teaching soft skills as well as technical skills, and I think that should help statisticians appreciate what it takes to be a successful collaborator.

Q **You worked on cancer research early in your career, and then you moved into heart, lung, and blood research. What motivated this transition?**

A A statistician can work in any field of application. Although I never considered going to medical school, I always found medicine interesting. My transition from cancer to heart was not motivated by the medical area, but by the opportunity to do something different in medicine and the opportunity to find new statistical problems.

Q **What was the most surprising or interesting thing that happened to you while you were on the ASA Board of Directors?**

A First, I was pleased to learn that the ASA works very smoothly, often because Ron Wasserstein and other senior staff will always pick up the slack if someone else (like the ASA president) misses something or cannot do it. Those who work for the government have certain restrictions on their participation in financial matters and in lobbying—such as visits to members of Congress—and these were activities others had to undertake. I was pleased and perhaps a bit surprised that the board worked so cooperatively and that we were never short of volunteers, no matter what the task.

The prestige that comes with the office was a bit of a surprise, especially when people who never talked to me before were suddenly so kind! These things aside, the travel as ASA president and meeting statisticians from all over the world was really interesting. My international travel was especially gratifying, with trips to Korea, Israel, Ireland, and Sri Lanka. The hospitality at the professional meetings I attended and by the faculty and students at these places was amazing! I also had the opportunity to meet a number of eminent statisticians, such as Sir David Cox and C.R. Rao.

Q **Knowing what you know now, if you had it to do all over again, would you?**

A Of course! It was a great experience. ■

COMING UP

Please return to this column next month, when we will feature an interview with 1997 ASA President Jon Kettenring.

Statisticians as Leaders

"Leaders are made, they are not born. They are made by hard effort, which is the price which all of us must pay to achieve any goal that is worthwhile." – Vince Lombardi

Matthew J. Gurka and Vaneeta K. Grover

Speakers for 2016 JSM Course: Preparing Statisticians for Leadership

Jon Kettenring, RISE director at Drew University and 1997 ASA president

Christy Chuang-Stein, NISS, former vice president at Pfizer, and ASA Fellow

Nathaniel Schenker, deputy director at NCHS and 2014 ASA president

In recent years, the ASA has made attempts to elevate leadership in the statistics profession, spearheaded by a two-day course at JSM. Preparing Statisticians for Leadership: How to See the Big Picture and Have More Influence has been offered at the previous two Joint Statistical Meetings and will be offered again at JSM 2016 in Chicago.

It features known statistician-leaders and provides guidance on personal leadership development—not just as leaders in our statistical groups, but as leaders in larger organizations.

We were recent participants in this course and will be co-facilitating the upcoming course with Gary Sullivan, senior director of global statistical sciences at Eli Lilly & Company. Here, we reflect on our experiences and discuss the importance of leadership in our profession from the perspectives of both academia and industry, respectively.

The notion of leadership has been studied and discussed in detail, with countless books, journals, and websites devoted to the topic. Yet, leadership is often overlooked in the statistics profession. We as statisticians either do not see ourselves as “natural born” leaders or we simply do not have the desire to pursue leadership opportunities.

Preparing Statisticians for Leadership: How to See the Big Picture and Have More Influence is a continuing education course that has been offered at the previous two Joint Statistical Meetings, and will be offered again at JSM 2016 in Chicago.



Matthew Gurka

Professor and Associate Director, Institute for Child Health Policy, University of Florida

The term “accidental leader” is not a novel one, but it certainly applies to me. Shortly after I arrived at my previous institution (West Virginia University), a school of public health was formed, along with a need for a department

of biostatistics. I found myself the founding chair of one of five new departments, charged with building degree programs and recruiting faculty and students. This opportunity came to me much earlier in my career than expected, and I quickly sought opportunities to learn about leadership.

The JSM leadership course was a unique chance to focus on leadership within the context of our statistics profession. What is leadership anyway? How does one lead those who report to you, but also how does one “lead up” and “manage” the people to whom we answer? These are the types of questions discussed in detail during this course, and it helped me tremendously.

Beyond practical skills and sharing of others’ experiences, however, the most important focus of this course is the notion that we, as statisticians, should think about leadership opportunities in our larger organization, not just within our statistics group(s). This had a profound impact on my career. I found myself taking on leadership roles in the school as a whole, not just isolating myself in my department. I have welcomed the opportunities to continue to do statistics, but also to help lead in the larger environments where I am located, which has now taken me to my new position at the University of Florida.



Vaneeta Kaur Grover

Manager, Statistician,
GlaxoSmithKline

I have played leadership roles in different capacities since I was in high school. However, translating [those experiences] into leader as a statistician was not that straightforward. The JSM leadership course helped me understand the importance of considering the bigger picture (strategy and business direction). It not only identified the ways in which we can get a “seat at the table” for discussion and “influence the business

decisions” as statisticians, but also develop the skills required for negotiations, effective communication, and taking on the leadership role.

One of the strengths of the course is that it touches different learning styles—discussions, hands-on exercises, and listening to the experiences of what did and did not work from leadership speakers. This had a big impact on my career. It made me think about my role, my responsibilities and opportunities for future development. As a result, I recently made a career change from the chemical industry, being the sole statistician at Chemours, to a team of statisticians at GlaxoSmithKline with a greater opportunity for leadership. I was able to leverage my learning from the course during the interview and hiring process and expect to apply and grow other leadership concepts as I begin my new career at GlaxoSmithKline.

Not ‘Just a Statistician’

To summarize, this course had an incredible impact on two statistician’s career journeys. It not only introduced them to the general notion of leadership and all that goes with being a good leader, but it also made them reflect on leadership opportunities for them as statisticians. The skills they inherently have as statisticians—listening, patience, flexibility, integrity, the ability to communicate difficult concepts to others—are also the characteristics that make good leaders in general.

We need to abandon the phrase “I’m just the statistician” and actively think about opportunities in which our unique skill sets can contribute to our larger organization. We encourage you to consider leadership in your own career trajectories, and we hope to see you at the leadership course in Chicago! ■

THEY TRUST OUR RESEARCH. WE TRUST



19 of the top 20* pharmaceutical
companies are PASS customers

**based on 2014 gross sales*

Try a free 7-day demo at:
ncss.com/download/pass/free-trial

PASS¹⁴ calculates sample sizes for over 680
sample size scenarios - more than double
that of any other sample size software.

Cluster-Randomized Designs • Conditional Power • Confidence Intervals • Correlation •
Cross-Over Designs • Equivalence • Exponential Distribution Parameters • Group-Sequential
Tests • Means - One, Two, Paired, ANOVA • Michaelis-Menten Parameters • Longitudinal Mixed
Models • Non-Inferiority • Nonparametric • Normality Tests • Proportions • Quality Control •
Rates & Counts • Regression • Repeated Measures • ROC Curves • Sensitivity & Specificity •
Standard Deviations • Superiority by a Margin Tests • Survival Analysis • Variances



Bundle NCSS¹⁰ with
PASS¹⁴ to add hundreds
of analysis and
graphics tools.



Celebrating **30** YEARS of Statistical Software Innovation

801.544.3465
www.ncss.com



Significance Gets New Look

Brian Tarran, *Significance* Editor

Regular readers of *Significance* may have already noticed things look a little different. To coincide with the start of a new volume, both the print and online magazine underwent a major redesign recently.

While many readers will subscribe to the notion—put forward by Bill Gates in the mid-1990s—that “content is king,” the editorial staff thought it was time for a bolder, more eye-catching design that would capture the attention of as wide of an audience as possible.

Significance was a unique proposition when it launched more than a decade ago, and it remains so. Its purpose is to entertain and inform, to demonstrate the importance of statistical thinking, and to explain the contributions statistics makes to our understanding of key issues and the role it plays in society. Our content is meant to be read by, and have relevance to, statisticians and other data professionals, but our goal is to reach beyond these communities as well. Half of that battle involves capturing people’s attention, which—in a world awash with news and information sources—is no easy feat.

From our masthead on down, we have taken on a new design, yet we continue to publish the same content subscribers have enjoyed reading for the past 12 years. Online, it’s largely business as usual,

but the magazine content is now arranged into the following three main sections:

- **In Brief** serves as a window to the world of statistics, while offering a perspective on the wider world as seen through the lens of statistics. Here, readers will find a mix of news, analysis, and new regular features, including “Statistically Speaking,” which seeks to challenge published claims and misuses of statistics, and “Ask a Statistician,” where the public has a chance to ask questions of statistical experts.
- **In Detail** offers a deeper dive into topical issues. Citizen science, the human sex ratio, and peer review are discussed in our February issue, while future issues will feature our regular mix of sports, politics, and business-related articles.
- **In Practice** is an entirely new section devoted to explaining how statistical tools and methods are applied, as well profiling statisticians and the work they do. A recent issue includes an overview of the use of screening tools designed to catch illegal business cartels and an interview with AIG’s chief data scientist.

However you choose to read *Significance*—whether online or in print—members of the editorial staff hope you love what you find within. ■

MORE ONLINE
If you are interested
in writing for
Significance, visit
<http://bit.ly/2206Rsm>.

Learn Survey Research Techniques in the 2016 Summer Institute

Now in its 69th year, the Summer Institute in Survey Research Techniques offers courses and workshops on many aspects of survey research. These courses and workshops are aimed at various skill levels and in time frames ranging from one to eight weeks.

Some courses require participants to have a quantitative background and/or familiarity with survey research methods, while others are aimed at those who have little or no experience in the field but want to learn basic concepts. Topics include the fundamental principles involved in drawing samples, designing questionnaires, data collection, and analysis of survey data.

The program begins June 6, and courses meet through July 29. Most courses are held two to three hours every weekday for one week or two weeks, and many meet two or three days a week for four weeks or eight weeks. Courses offered in a compressed time frame can be demanding. Participants are assigned readings, homework, written projects, and exams.

Summer Institute Staff

Jim Lepkowski, Director

Jill Esau, Program Coordinator

Patsy Gregory, Program Assistant

Jodi Holbrook, Program Assistant

The program draws on a renowned group of instructors who teach in the program partly because of the enthusiasm of the students. Those who attend the Summer Institute are highly motivated—graduate students, professionals, government employees, and other academics. Some instructors say teaching in the Summer Institute is the highlight of their year. The positive attitude of most of the students energizes the faculty, some of whom fondly remember their own experience as students in the program.

For details, visit the Summer Institute website at www.si.isr.umich.edu. You also can call (734) 764-6595 or (877) 880-9389 for more information. ■



The 2016 International Conference on Questionnaire Design, Development, Evaluation, and Testing (QDET2) will take place **November 9–13, 2016, at the Hyatt Regency in Miami, Florida.**

Keynote Speakers **Mario Callegaro**, Google UK

Gordon Willis, National Cancer Institute, National Institutes of Health

QDET2 will be the first international conference in more than a decade devoted to both the design of survey questionnaires and the methods used for their development, evaluation, and testing. It will provide a creative environment for researchers from across the world working in government, academia, and the private sector to share new solutions and fresh approaches to survey measurement, questionnaire design, and evaluation.

Details at ww2.amstat.org/meetings/qdet2

ASA Receives Grant to Establish Series of REUs

Kumer Das, Monica Jackson, Sallie Keller, Donna LaLonde, Stephanie Shipp, Jessica Utts, and Mark Daniel Ward

The American Statistical Association recently received a \$380,340 National Science Foundation (NSF) grant to establish a series of undergraduate research experiences on campuses throughout the United States with the goal of invigorating the undergraduate research community in statistics.

The project is for 2016–2018, with three research experiences for undergraduates (REU) sites per year, for a total of nine REU sites. At each site, four students will work in teams so that 36 students will participate during the life of the project. At each site, students will conduct research for 10 weeks. They will investigate complex data sets from varied scientific and engineering disciplines in which statistics plays a key role for data analysis.

Recruitment will target (but not be limited to) women, minorities, and persons with disabilities. Supported students must be U.S. citizens, nationals, or permanent residents.

One expected outcome is a greater number of students who are well prepared for graduate study in statistics. Moreover, we expect these experiences will influence the students' career choices in the long run. Most of the projects are anticipated to have a significant interdisciplinary component. Thus, the students will see how statistics has an impact on fields such as engineering, atmospheric science, health care, and all kinds of public policy.

A goal of the ASA is to promote undergraduate research experiences in statistics. Faculty who want to respond to the NSF's REU solicitation in August are welcome to seek feedback from our team of investigators; we are glad to help our colleagues who are starting (or continuing) their own REU programs on their campuses. Moreover, the ASA will coordinate three more REU sites in 2017 and three more in 2018. If you are interested in applying for such an REU site, please write to REU@amstat.org for more information.

The three NSF-sponsored REU sites administered through the ASA this year are described

below. This material is based upon work supported by the NSF under Grant No. DMS-1560332.

SPIRAL at Morgan State University, coordinated by Monica Jackson

The goal of the Summer Program in Research and Learning (SPIRAL) is to provide a mentoring structure for under-represented minorities and women that promotes active engagement in mathematics and statistics. With a supportive structure, the participants will be encouraged to pursue and remain in mathematics and/or statistics with the hopes that they diversify the talent pool of fully trained mathematicians/statisticians in academia, government, and industry.

This year, the statistics project will be in the field of spatial statistics. Students will investigate methods for detecting clusters and global clustering patterns. In addition, they will analyze a data set with a spatial correlation structure.

The program is three-pronged:

1. Students will participate in research seminars in mathematics and statistics in which research projects will be investigated in teams. Each team will write a final paper discussing their results and give an oral presentation.
2. There will be an intensive four-week course emphasizing mathematical proofs with problem workshops and daily homework that consists of three modules—applied mathematics, statistics, and basic foundations of mathematics—to assist the students in their research projects.
3. One day a week will be devoted to professional development and career awareness, enhancing the students' view of the mathematical and statistical world.

SPIRAL was created as an REU that would address the issues of human capital and materially strengthen the students' foundation so they return to their schools at a higher level than when they left. Students will be advanced first-year or

sophomore students who have completed calculus II, are pursuing a major in mathematics or statistics, and who have at least a 3.2 average.

SDAL DSPG at Virginia Tech, coordinated by Sallie Keller and Stephanie Shipp

The Social and Decision Analytics Laboratory (SDAL)—located in Arlington, Virginia—will host the Data Science for the Public Good (DSPG) REU program. SDAL is part of the Biocomplexity Institute of Virginia Tech and central to their “information biology” theme to study massively interacting systems from molecules to policy.

The SDAL research is at the interface of data analytics and understanding (modeling) the social condition quantitatively at scale. In this context, the DSPG program will introduce students to how communities are struggling to provide health, safety, security, employment, and leisure to their citizens in an environment of constricting resources, increasing inequality, rapidly increasing technological innovations, and growing global networks. This provides a rich and mutually rewarding opportunity to leverage community knowledge and massive data resources with statistics, social science, and data science research.

The DSPG research projects planned for this summer are based on social science and statistical theory, research, and practice. The projects are driven by real problems of interest to local municipalities that collect data as part of their daily operations. The goal is to liberate and repurpose these natural flows of data to answer their questions.

Students will become part of SDAL teams that are vertically integrated across researchers, from undergraduate students to senior faculty, and horizontally integrated across multiple statistics and social science disciplines. Students will engage in all phases of the data cycle—data source discovery, data acquisition, profiling, and evaluating the data for completeness, uniqueness, and consistency and developing and conducting statistical analyses.

Stat REU at Lamar University, coordinated by Kumer Das

Stat REU at Lamar University (LU) is a 10-week research and academic experience. LU is one of eight institutions in the Texas State University

The students will see how statistics has an impact on fields such as engineering, atmospheric science, health care, and all kinds of public policy.

System and has been classified as one of the 29 public universities nationally named a doctoral research university by the Carnegie Foundation. This REU site offers sophomores, juniors, and seniors the opportunity to perform summer research in the fields of Big Data analytics, data dimension reduction, text mining, and image processing.

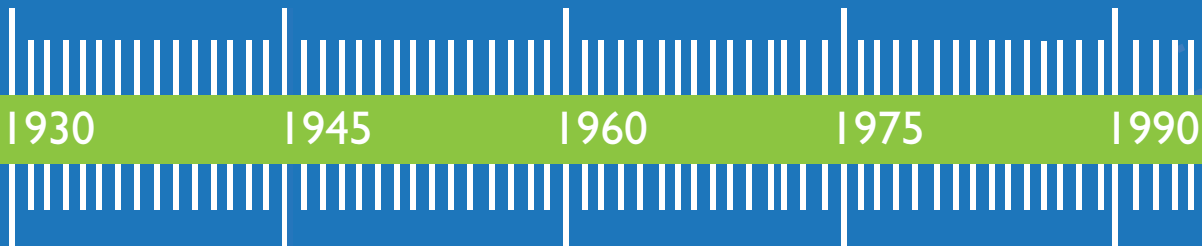
Students will be engaged in all stages of the Big Data analysis cycle. Stat REU at LU is designed to spark and sustain excitement about undergraduate research throughout the statistics discipline. The students will further be trained in all aspects of research, from the ethics code to using library and online resources to delivering oral presentations to using LaTeX to write statistical papers. ■

SPRING RESEARCH CONFERENCE

Illinois Institute of Technology is hosting the 2016 Spring Research Conference, May 25-27, 2016, in Chicago, IL. Details, including updated conference program and submission information, are available at <http://iit.edu/src2016>.

SRC has a history of more than two decades, and continues to explore many important topics, including statistical methodologies and theories on design and analysis of experiments, uncertainty quantification, computer experiments and statistical computing, applications of data science in business, industry and government policy making, methods on quality improvement and measurement system, etc. This year's keynote speakers are Jeff Wu from Georgia Tech, Henry Wynn from London School of Economics, and Dennis Lin from Penn State. Join us in Chicago.





2016 MATHEMATICS AWARENESS MONTH

The Future Of Prediction

A blue rectangular graphic with white text and a pattern of small white squares. The text reads: "WANT TO MAKE ACCURATE PREDICTIONS? GET LUCKY, GET PSYCHIC, OR GET DATA!" followed by "GOOD DATA + GREAT STATISTICAL METHODS = GREAT FUTURE FOR PREDICTION!" and "—JESSICA UTTS, 2016 American Statistical Association President".

"WANT TO MAKE ACCURATE PREDICTIONS?
GET LUCKY, GET PSYCHIC, OR GET DATA!"

GOOD DATA
+
GREAT
STATISTICAL
METHODS
=
GREAT FUTURE
FOR PREDICTION!"

—JESSICA UTTS, 2016 American Statistical Association President

April is Mathematics Awareness Month (MAM), and the Joint Policy Board for Mathematics (JPBM) has selected “The Future of Prediction” as the theme.

Yogi Berra, paraphrasing Niels Bohr, said, “It’s tough to make predictions, especially about the future.” Throughout Mathematics Awareness Month 2016, we will explore how mathematics and statistics are the future of prediction, providing insights and driving innovation. During the month, we will be asking the question, “What’s next?” and exploring how mathematicians and statisticians contribute to society.

Effective prediction is essential to improving medicine; monitoring climate; providing sufficient, safe food supplies; and much more. Mathematics and statistics provide fundamental tools to see and shape the road ahead. The JPBM’s goal for MAM 2016 is to encourage students to study mathematics and statistics, explore career opportunities, and investigate how mathematics and statistics provide the tools to make accurate predictions possible.

WHAT'S

NEXT?

2005

2020

2016 Mathematics Awareness Month

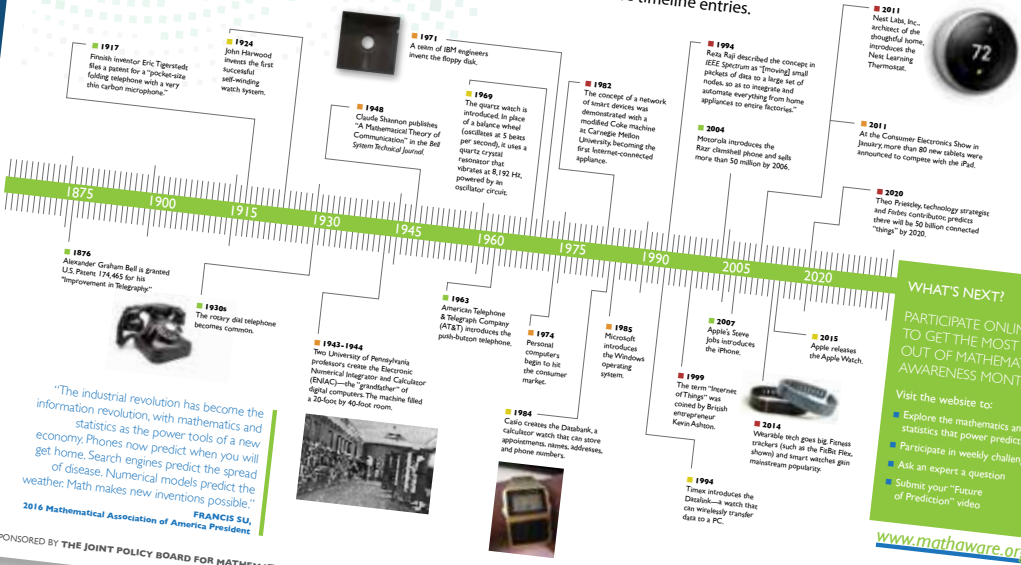
The Future of Prediction

Yogi Berra, paraphrasing Niels Bohr, said "It's tough to make predictions, especially about the future." Throughout Mathematics Awareness Month 2016, we will explore how mathematics and statistics are the future of prediction, providing insights and driving innovation. During the month, we will be asking the question, "What's next?" and exploring how mathematicians and statisticians contribute to the future. So, visit the website and join the quest to help us predict future timeline entries.

"Want to make accurate predictions? Get lucky, get psychic, or get data! Good data + great statistical methods = great future for prediction!"

JESSICA UTTS, 2016 American Statistical Association President

JOIN THE DISCUSSION! What does the "Future of Prediction" mean to you? Share your insights by tweeting @mathaware or sharing on www.mathaware.org



WHAT'S NEXT?
PARTICIPATE ONLINE TO GET THE MOST OUT OF MATHEMATICS AWARENESS MONTH

- Visit the website to:
- Explore the mathematics and statistics that power prediction
- Participate in weekly challenges
- Ask an expert a question
- Submit your "Future of Prediction" video

www.mathaware.org

In addition to a MAM poster, the website at www.mathaware.org hosts a number of resources for this year's observance—including articles and essays—to show how mathematics and statistics make prediction possible and highlight the exciting work mathematicians and statisticians are doing.

Activities for Mathematics Awareness Month will be organized on local, state, and regional levels by schools, college and university departments, student groups, and other interest groups. Individuals and organizations may contact Donna LaLonde at DonnaL@amstat.org for more information about participating.

Mathematics Awareness Month, held each year in April and sponsored by the JPBM, was established by presidential proclamation in 1986 to increase public understanding of and appreciation for mathematics. The JPBM is a collaborative effort of the American Mathematical Society, American Statistical Association, Mathematical Association of America, and Society for Industrial and Applied Mathematics. Visit www.mathaware.org for resources and information. Like us on Facebook and follow us on Twitter at @MathAware. ■

- MORE ONLINE**
- Visit www.mathaware.org to:
- Explore the mathematics and statistics that power prediction
 - Participate in weekly challenges
 - Ask an expert a question
 - Submit your "Future of Prediction" video

FH17 Requests for NIH, NSF, Federal Statistical Agencies Largely Positive

Difficult Funding Environment Makes Increases Unlikely

Steve Pierson, ASA Director of Science Policy

President Obama's requested budget for Fiscal Year 2017 (FY17)—his final budget request—maintains his record of proposing generally healthy increases for the National Institutes of Health (NIH), National Science Foundation (NSF), and many federal statistical agencies. Realizing increases of any amount will be challenging, however, because the overall federal budget for discretionary funding increased only 0.3% (from \$1.067 trillion to \$1.070 trillion). Moreover, the requested increases for NIH and NSF—2.6% and 6.7%, respectively—largely rely on a new mandatory funding mechanism unlikely to be adopted by this Congress. Nonetheless, the ASA urges its members and the broader statistical community to contact their senators and representative and ask them to support increases for the agencies they most support.

NIH, NSF, and AHRQ

The FY17 request for NIH is \$33.1 billion, an increase of 2.6% over the FY16 level, but \$1.8 billion is from the proposed new mandatory financing. Without the mandatory financing, the FY17 request is only \$31.3 billion, a decrease of \$1 billion from the FY16 level.

The increase includes \$680 million for Vice President Biden's cancer moonshot, announced in President Obama's State of the Union Address. The requested budget also proposes \$100 million more for the president's Precision Medicine Initiative (PMI)—to raise the total budget to \$300 million in FY17—and another \$45 million for the president's BRAIN Initiative, which would bring its total funding to \$195 million.

According to NIH documents, the \$100 million increase for PMI would be used to continue the ramp-up of the national research cohort toward 1 million plus participants and activities to include informatics, building a biorepository, genome analysis, and core phenotyping. The additional funding for the BRAIN initiative in FY17 would “continue to support basic neuroscience research, human neuroscience, neuroimaging, and training initiatives, as

well as potential projects to collaborate with industry to test novel devices in the human brain, new ways to address Big Data from the brain, and developing devices for mapping and tuning brain circuitry.”

For Big Data to Knowledge (BD2K), the request proposes an increase of \$6.2 million (9.8%) to \$69.1 million. The FY15 level for BD2K was \$40.8 million. NIH documentation states that, in FY17, “The program will support development of Big Data software, reference data sets, and data analysis and dissemination methods. The program will work to make Big Data software innovations available and user-friendly. It will also support innovative approaches to advance biomedical science using crowdsourcing and interactive digital media.” It also reports, the program “now includes 11 Centers of Excellence for Big Data Computing as well as NIH-funded scientists across the country working to develop new software, methods, and other solutions to solve the puzzles presented by collecting, analyzing, and sharing large biomedical data sets.”

For the National Cancer Moonshot, NIH documents state the elements of the FY 2017 Cancer Research Initiative include the following:

- Developing new techniques to detect cancer earlier
- Developing new vaccines to prevent cancer-causing infections and vaccines to target genetic changes that can cause cancer
- Expanding recent successes in cancer immunotherapy to a much wider range of tumor types
- Expanding research on mutations that drive cancer and determine how cells respond to cancer
- Accelerating progress on detecting and treating childhood cancers
- Fostering enhanced data sharing to speed discovery and verify treatment response
- Funding other promising opportunities in cancer discovery, prevention, and treatment

\$400 million of the \$500 million (6.7%) requested increase for the NSF is from the new mandatory funding scheme. Without the mandatory funding source, the increase is only 1.3%.

The FY17 request continues the same four cross-foundation investments as in the FY16 request:

- Understanding the Brain (\$142 million)
- Risk and Resilience (\$43 million)
- Innovations at the Nexus of Food, Energy, and Water Systems (\$62 million)
- Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (\$16 million)

The request also maintains support for NSF-wide priorities as in FY16: Clean Energy; Cyber-enabled Materials, Manufacturing, and

Smart Systems (CEMMSS); Cyberinfrastructure Framework for 21st Century Science, Engineering, and Education (CIF21); Innovation Corps (I-Corps™); Research at the Interface of Biological, Mathematical, and Physical Sciences (BioMaPS); Science, Engineering, and Education for Sustainability (SEES); and Secure and Trustworthy Cyberspace (SaTC). The NSF Research Traineeship (NRT) program was omitted from this list in FY17.

The FY17 budget request for the Agency for Healthcare Research and Quality (AHRQ) is for \$364 million. This is an increase of 9% of over FY16, but it reverses the cut from FY15 to FY16 to restore the agency to its FY15 level. In addition to the \$364 million, the AHRQ request also includes \$106 million from the Patient-Centered Outcomes Research Trust Fund, an increase from the \$94.5 million it received from the fund in FY15.

Table 1—FY17 Budget Requests for NIH, NSF, AHRQ, and the 13 Primary Federal Statistical Agencies

	FY12	FY13	FY14	FY15	FY16	FY17 Request	Change from FY16
Research Agency (amounts in millions of dollars)							
NIH	30623	29300	30070	30311	32311	33116	2.6%
NSF	6884	6884	7172	7344	7463	7964	6.7%
AHRQ	381	371	371	364	334	364	9.0%
Statistical Agency (amounts in millions of dollars)							
BEA	92.2	89.8	95.0	96.3	105.1	110.7	5.3%
BJS	41.3	41.3	45.0	41.0	41.0	58.0	41.5%
BLS	609.0	577.2	592.2	592.2	609.0	641.0	5.3%
BTS	25.2	26.0	26.0	26.0	26.0	26.0	0.0%
Census	942.4	841.7	945.0	1088.0	1370.0	1660.0	21.2%
EIA	105.0	99.5	117.0	117.0	122.0	131.0	7.4%
ERS	85.4	79.1	85.8	85.4	85.4	91.0	6.6%
NASS	167.8	175.2	170.4	172.4	168.4	177.0	5.1%
NCES	247.0	226.0	235.0	232.1	261.0	274.0	5.0%
NCHS	154.1	154.1	155.4	155.4	160.4	160.4	0.0%
NCSES	43.3	41.6	47.1	58.3	58.5	60.0	2.6%
ORES	29.0	27.5	26.9	29.0	25.9	27.0	4.2%
SOI	38.7	33.1	35.0	36.6	37.9	38.0	0.3%

*ERS, NASS, and NCHS went through accounting changes last year and so the FY15, FY16, and FY17 levels aren't comparable with the FY13 and FY14 levels.

Federal Statistical Agencies

The proposed budgets for the federal statistical agencies range from flat—for the Bureau of Transportation Statistics (BTS), National Center for Health Statistics (NCHS), and Internal Revenue Service Statistics of Income Division (SOI)—to increases of 21% for the U.S. Census Bureau, which is ramping up for the 2020 decennial census, and 37% for the Bureau of Justice Statistics (BJS).

The requested increase for the Bureau of Economic Analysis (BEA) is 5.3% on paper, but it's a larger increase for its programs because its FY16 budget includes funds of approximately \$5 million for its relocation to the Census Bureau headquarters in Suitland, Maryland. Their requested increase includes \$2.6 million for inflationary adjustments salaries, non-labor activities, and other personnel expenses and proposes a Regional Economic Dashboard (\$3 million) and the Accelerating and Improving the Quality of Economic Indicators (AIQEI) initiative (\$1.9 million).

The \$131 million (7.4% increase) proposed for the Energy Information Administration (EIA) is to continue its current data collection, analysis, and dissemination activities and expand its work in four areas, including achieving more regional detail on petroleum data and analysis; enhancing energy efficiency data of commercial buildings; gaining a better understanding of domestic energy markets in the context of the world energy system; and collecting and analyzing data on personal vehicle transportation to develop projections of motor fuel demand.

The substantial requested increase for the Bureau of Justice Statistics (BJS)—which largely repeats the (unsuccessful) FY16 request—includes \$6 million to provide subnational estimates from the National Crime Victimization Survey.

The National Agricultural Statistics Service (NASS) would see an \$8.6 million (5.1%) increase, including \$2 million to add questions to existing surveys (e.g., for cattle, hogs, and poultry); \$3 million to survey beginning farmers at a regional level of detail; \$1 million to study modern farm structure; and \$1 million to enhance current satellite-based agricultural monitoring to provide crop condition, soil moisture, crop progress, and crop yields.

The Economic Research Service (ERS) has a 6% requested increase to \$91 million, which, if implemented, would help offset cuts—due to inflation and sequestration cuts—to its budget since FY10. It also proposes \$4 million to update the 2012 National Household Food Purchase and Acquisition Survey, \$500,000 to examine differences in demographic

characteristics of new farmers and ranchers, and \$626,000 to conduct research on conservation practice adoption and drought mitigation by American farmers and ranchers in drought-prone regions.

The Bureau of Labor Statistics (BLS) sees a \$32 million requested increase (6.8%), which would help offset its approximately 12% cut in purchasing power since FY10 due to inflation. It also seeks \$1.6 million to add an annual supplement to the Current Population Survey, \$3 million for the first year of activities for a survey of employer-provided training, and \$2.5 million for the Consumer Expenditure Survey development of a supplemental statistical poverty measure.

The 5% requested increase for the National Center for Education Statistics (NCES), according to its budget documents, would support “the collection, analysis, and dissemination of education-related statistics in response to both legislative requirements.” It also includes \$7.1 million to re-initiate the Early Childhood Longitudinal Study Birth Cohort, \$2.5 million for a study on student loan repayment and defaults, and \$2.8 million to expand the Teaching and Learning International Survey.

The National Center for Science and Engineering Statistics' (NCSES) requested increase is for the development of enhanced data access tools, techniques, and visualizations; new data collection techniques building on administrative data and other Big Data sources; and questionnaire redesign and survey improvements to support improved data on measures of innovation and educational and career pathways for scientists and engineers.

The flat funding request for SOI will likely mean their freeze on external hires—in place for the last several years—will continue into FY17 and similarly for the freeze on almost all promotions.

The Social Security Administration Office of Research, Evaluation, and Statistics (ORES) has a requested increase of \$1.1 million, or 4.2%.

The 21% requested increase for the U.S. Census Bureau has an additional \$179 million for the 2020 Census, including \$20 million for the American Community Survey to reduce program risk and respondent burden. It also includes \$5 million for the 2017 Economic Census and Census of Governments, \$3.3 million for the AIQEI initiative, and \$8.4 million to modernize economic statistics.

Details about the FY17 federal statistical agency requests can be found at <http://bit.ly/1RQl85Y>, along with links to the analyses from the Consortium of Social Science Associations. ■

Fantasy Football, Basketball, Tennis, Designing Tournaments Featured in March Issue

Mark E. Glickman, *JQAS* Editor-in-Chief

The March 2016 issue (volume 12, issue 1) of the *Journal of Quantitative Analysis in Sports* (*JQAS*) consists of four articles with applications to fantasy football, basketball, tennis, and the optimal design of tournaments.

“An Analytical Approach for Fantasy Football Draft and Lineup Management” by **Adrian Becker** and **Xu Andy Sun** is the Editor’s Choice article for this issue and available for free download for 12 months. The article develops and investigates a methodology for selecting lineups in fantasy NFL football that is optimized for winning an entire NFL season. The approach uses historical data to construct player and team performance predictions, and then builds a mixed integer programming model that uses the predictions to guide draft selections and weekly lineup management. The approach is demonstrated on lineup picks for several NFL seasons.

“Bayesian Optimal Design of Fixed Knockout Tournament Brackets” by **Jonathan Hennessy** and **Mark Glickman** extends published work by the second author to construct knockout tournaments that globally optimize a specified utility function given partial information about players’ strengths. The paper discusses Monte Carlo estimates of the expected utility and demonstrates a simulated annealing algorithm to optimize the expected utility over the space of candidate tournaments. The paper focuses mainly on designing tournaments that maximize the probability the best player wins the tournament, but also considers other utility functions such as maximizing the probability the best two players meet in the final round of the tournament.

“Modeling and Forecasting the Outcomes of NBA Basketball Games” by **Hans Manner** develops a state-space model for predicting NBA basketball outcomes. The model accounts for home-court advantage and instances when teams play back-to-back games. The framework includes a model component that addresses team-specific



Thinkstock photo

The March issue of *JQAS* features an article asking: “Is There a Pythagorean Theorem for Winning in Tennis?”

heteroscedasticity. The results of the modeling approach are demonstrated on NBA game outcomes from 2006–2014 and compared to the betting market’s point spreads.

Finally, “Is There a Pythagorean Theorem for Winning in Tennis?” by **Stephanie Kovalchik** investigates the appropriateness of Bill James’ “Pythagorean theorem” in baseball for measuring tennis win frequency. The paper investigates the application of the Pythagorean theorem to 27 candidate measures of tennis performance based on results from competitive tennis from 2004–2014. The paper also investigates the Pythagorean theorem applied simultaneously to all measures by developing a logit-linear regression model in which the transformed candidate measures are the predictors. The author finds that converted break points has the best relationship with future winning frequency within the Pythagorean theorem framework.

These articles are available to all members of the Section on Statistics in Sports and on a subscription basis from the *JQAS* website, which can be found at www.degruyter.com/view/j/jqas. Also, prospective authors can find the journal’s aims and scope, as well as manuscript submission instructions, on the website. ■

Review and Edit, Writing Workshops Planned for JSM

Two workshops are planned for JSM 2016 in Chicago that are designed for new researchers to develop capabilities for research publication. The Writing Workshop for New Researchers continues the series of workshops in which each participant receives individual mentoring by an experienced journal editor. Additionally, the new Review and Edit Workshop will be offered by a team of executive editors of leading journals to junior researchers as they take up new responsibilities for reviewing technical articles and joining the ranks of associate editors.

Writing Workshop for New Researchers

The goal of the Writing Workshop for New Researchers is to provide instruction for writing journal articles and grant proposals. Participants will be required to provide a recent sample of their writing, which will be reviewed by a senior mentor. The sample can be a current draft of an article to be submitted for publication or an early version of a grant proposal. Submission of the writing sample is required at registration, although an updated draft may be submitted in July to the mentor. (Participants benefit maximally by choosing an early draft written solely or primarily by the participant and not under review or edited by a senior coauthor or mentor.)

Mentors will be former journal editors and program officers. They will critique the submitted material and provide individual feedback. Participants will be expected to initiate a revision in response with additional feedback from their mentors.

The workshop consists of three sessions and a final working lunch. On Sunday, the morning session will be a tutorial on effective writing techniques for technical articles. The afternoon session will take up specific issues such as requirements of specific journals, ethics, dealing with reviews, and revisions. It will conclude with individual conversations between mentors and participants.

The Wednesday morning session will focus on specific issues for participants whose native language is not English, with commentary by panels of

experienced researchers who are non-native English speakers. Participants are expected to prepare an agreed-upon revision of a (limited) critiqued portion of the draft manuscript to return to the mentor for further comment. The working lunch on Wednesday will focus on further discussion and feedback, as well as allow time for follow-up discussions between participants and their mentors.

The writing workshop is designed for researchers with a PhD in statistics or biostatistics awarded or anticipated during 2010–2016. Attendance will be limited, with applicants within 0–3 years post-PhD receiving preference.

Applications (www.surveymonkey.com/s/writingworkshopjr) are due June 1; successful applicants will be notified by June 30. Applications received after June 1 will be considered if space is available. There is no fee for participation, but participants must agree to attend the full workshop with exceptions permitted for a conflict with a participant's scheduled presentation. Partial travel support is anticipated for participants without other funding. If space is available, researchers at institutions outside the United States will be admitted. Registration at JSM is required.

Review and Edit Workshop

Reviewing technical articles for publication and determining which of these are published in statistical journals is the lifeblood for statistical research. Quality in reviewing and selection of manuscripts for publication depends upon skilled reviewers and editors. With many new journals both online and in print, both reviewers and editors are taking on these responsibilities without a great deal of personal experience. The goal of this workshop is to assist new reviewers and editors by drawing on the experience of senior editors.

Speakers and mentors will be experienced senior editors. The workshop will be a half day, beginning with a working breakfast. The program will be in two sessions, the first on reviewing and the second on editing. A one-hour tutorial will be followed by separation into three or four roundtables, each led by one of the editor-mentors.



Thinkstock photo

The Review and Edit Workshop is designed for researchers who publish in the statistical literature and hold a doctorate awarded since 2008 in statistics, biostatistics, or a related field.

The first session tutorial will address such questions as: What constitutes an “excellent” review? What does an editor need to know from a reviewer? What does the author need to know from the reviewer? Which judgments should be made by reviewers and which by editors?

The second session tutorial will focus on questions like: What are the paradigms for operating a journal? What *really* is the job of an associate editor (depending on the journal’s editorial model)? How should judgments be reached about finding reviewers? How should the reviews received be evaluated? What about complaints (legitimate or not)? How is the role of an (executive) editor different?

Roundtables will be small groups organized around their areas/types of research. Participants will discuss real examples, synthesized examples, and

reviews they have written or received. Participants will be asked to prepare materials in advance.

The Review and Edit Workshop is designed for researchers who publish in the statistical literature and hold a doctorate awarded since 2008 in statistics, biostatistics, or related field. Attendance at the Review and Edit Workshop will be limited, and applicants within 3–7 years post-PhD will receive preference. Applications (www.surveymonkey.com/sl/writingworkshopjr) are due by June 1; successful applicants will be notified by June 30. Applications received after June 1 will be considered if space is available. There is no fee for participation. Partial travel support is anticipated for participants without other funding. If space is available, researchers at institutions outside the United States will be admitted. Registration at JSM is required. ■

STATtr@k

Internships Make Such a Difference: The Experiences of Four Students

Compiled by the Statistical Partnerships Among Academe, Industry, and Government Committee

RUOBIN GONG, PhD Student, Harvard University

While an undergraduate at the University of Toronto, I was fascinated with cognitive behavioral research. The training I received was typical of an experimental psychologist, covering everything from running experimental subjects to writing fMRI processing scripts. Statistics as a discipline was first introduced to me that way. I didn't make out the Cohen's Ds, Newman-Keuls, or Latin squares at the time, but nevertheless grew a secret appreciation for the principled inferential reasoning statistics has to offer. In the fall of 2013, I took a leap of faith and began to pursue a PhD in statistics at Harvard University.

Life as a PhD student is undeniably rewarding, despite not being the easiest. Pressure, self-doubt, and sleep deprivation cannot offset the excitement when an algorithm finally works, a model fits, or a derivation checks out. But as a scientist-turned statistician, something still feet restless: the desire to be in sync with real-life data problems. It takes far more than statistical proficiency to carry out a project from end to end; an overseeing vision can only be gained through hands-on experience. So when I came across Data Science for Social Good (DSSG) at the beginning of 2015, I immediately knew I needed to take part in it. After a short application and a Skype chat with the director, Rayid Ghani, my summer was set and I was Chicago bound.

DSSG is The University of Chicago summer fellowship that works with government and non-profit organizations to use data-driven methods to address their pressing concerns, employing data that are readily available but cannot be put to efficient use. Last summer, it created an unprecedented learning experience for an amazing cohort of 42 fellows, thanks to the dynamic nature between the projects and people. Representing diverse academic backgrounds, we the fellows worked on 12 projects for social good, tapping into every facet of the phrase's meaning.

My project focused on identifying high-school students at risk of not graduating on

time. Three U.S. public school districts partnered with us and provided historical student enrollment, academic performance, and discipline data, with which we built at-risk student early prediction models. Throughout the fellowship, my teammates and I operated on a high level of "vertical" autonomy, fulfilling tasks from directly communicating with partners to calibrate inferential goals and resolve data gaps to constructing our own query database to presenting and documenting our modeling work to both internal and external audiences.

Real-life data is incredibly messy—they look nothing like that design matrix X we see in a regression course. Moreover, whenever things can go wrong, they will go wrong. Throughout the past summer, I have been tremendously grateful for my teammates and peer fellows, for they gifted me with not only subject-matter knowledge for writing Python functions to fixing Git catastrophes, but also the art and practice of working in teams toward a mutual goal. I treasure the experience for all it has taught me and have no doubt it will prove crucial to forging successful collaborations with statisticians, scientists, and practitioners alike.

TYLER G. KINZY and JAMES P. NORMINGTON, Master's Students, University of Minnesota

From James: Tyler and I are both pursuing master's degrees in biostatistics at the University of Minnesota. Our department regularly notifies us about internship and employment opportunities, and the university has a job posting site that is regularly updated with both internal and external positions. We both started applying to a handful of applications, finally securing interviews and offers with the Allina Health Division of Applied Research (DAR).

All my previous work experience was in software, teaching, or running a register. I entered the graduate program with no research experience and felt lucky to find a position at DAR, a dynamic group of scientists, researchers, and

statisticians who work alongside medical staff to improve the quality of care delivered locally and nationwide. It's exciting to say the least.

I mostly work with emergency services data, which is concerned with pre-hospital care—care at the scene of incident, ambulance procedures, and dispatcher and paramedic performance. I primarily work in Stata, writing scripts to read in raw data, preparing it for analysis, and then conducting that analysis. Analyses I have conducted vary in complexity, but the usual suspects include Wilcoxon rank-sum tests, Chi-square tests, trend tests, and inter-rater reliability tests. Examples of current studies are evaluating cardiac arrest protocol adherence based on the American Heart Association's 2015 guidelines, assessing paramedics' well-being and job burnout via survey, and assessing the effectiveness of sepsis education. I also have taken the reins in claiming lead analyst roles, writing methods sections, and preparing institutional review board packages.

Working at Allina has given me the research backbone necessary to enter either academia or industry, a backbone I severely lacked when beginning my graduate studies. As I reflect on my Allina experience, I am grateful for the opportunity to have an effect on meaningful research, the lessons I have learned, and the friendships I have made.

From Tyler: I differed from James in that I worked for five years in health care before enrolling as a master's student. My previous work was in behavioral research, so the more clinical setting at Allina was a welcome change.

I was immediately impressed with DAR's diversity in research areas and the autonomy afforded to investigators and interns alike. The research is unique in its almost immediate application to the health system—something I feel is sometimes lacking in more academic environments.

I mainly work on research that describes and aims to improve health care delivery in critical care units. Studies have included identifying risk factors for respiratory failure in elective orthopedic surgeries and predicting cerebral performance after receiving therapeutic hypothermia. Analyses vary from the purely descriptive to using generalized estimating equations models to account for time-clustered to building predictive models using penalized regression.

The internship has been a great experience, allowing me significant sway on study design, analysis, and dissemination of findings. And, of course, Allina has introduced me to many amazing individuals who I look forward to collaborating with in the future.

Steven Willke, Undergraduate Student, The Ohio State University

I am a senior at The Ohio State University studying economics and actuarial science. I came to Ohio State with aspirations to become an engineer. However, I realized after a year that only the quantitative challenge of engineering intrigued me, so I switched my academic focus to mathematics and economics. Very quickly, I knew I made the right decision.

I became even more confident after my experience working with Kelly Zou at Pfizer as a statistical intern the summer after my sophomore year. In the classroom, I learned important mathematical concepts, but I actually got to use things I learned with Kelly. I also was exposed to concepts I would not be taught until later in my collegiate career. For example, I was lucky enough to work on a project in which we researched the differences between fixed effects modeling and random effects modeling, which I didn't learn in a more traditional sense until my junior year in an econometrics class. This project was eventually published in *Applied Statistics in Biomedicine and Clinical Trials Design*. Working on that project, along with the rest of my internship experience, reassured me that I wanted to do some sort of quantitative investigation work for a living.

I would encourage fellow undergraduate students interested in statistics or another quantitative field to seek out and take advantage of opportunities like the one I had. I remember feeling nervous about working with people with PhDs and master's degrees while I was still an undergraduate student, but the people I worked with were very willing to teach me and give me work that interested and challenged me. Even though I commuted to work 90 minutes every day, I always looked forward to going into work. I really enjoyed the atmosphere of intelligent people working together using various statistical methods to assess the safety and effectiveness of a drug, to improve clinical and outcomes research study practices, and to assure methodologic quality in other processes at Pfizer.

I was extremely lucky to have accomplished individuals like Kelly to talk with about various fields and the options available to people with statistics expertise. I told her about my interest in an actuarial career and she gave me advice about how to be successful in the field. Although there is still a long road ahead of me to become a fully credentialed actuary, I am happy with the position I am in at this stage of my studies. I'm about to have my second internship for a major insurance company and my experience as a statistical intern has not only set me apart in obtaining those internships, but also has almost surely improved the likelihood of achieving my actuarial ambitions. ■

SCIENCE POLICY

Leadership Is Listening: Data-Driven Decision-Making at NIGMS

Jake Basson

This month's science policy guest columnist, Jake Basson, writes about his data-driven decision-making work at the National Institute for General Medical Sciences. His effort and that of his colleagues exemplify the growing effort within the federal government to better integrate evidence and rigorous evaluation in budget, management, and policy decisions. Future columns will spotlight similar work in other agencies. Basson is doing this work as a AAAS Science and Technology Policy Fellow, an opportunity more statisticians should take advantage of.

—Steve Pierson, ASA Director of Science Policy



Jake Basson was born in Milwaukee, Wisconsin, and earned his BS in biology from the University of Wisconsin-Madison. His graduate work at Washington University in Saint Louis was in statistical genetics of complex traits with a focus on gene-gene interactions in blood pressure.

I became interested in science policy and motivated to improve data literacy after completing my PhD in biostatistics and witnessing polarizing discussions about such challenging issues as climate change and the alleged link between vaccines and autism. I chose to pursue a Science and Technology Policy Fellowship with the American Association for the Advancement of Science through their Big Data and Analytics program. I took a position at the National Institute for General Medical Sciences (NIGMS) in a newly revamped analytics office that is leading the charge toward data-driven decision-making at NIGMS. What I've found here is encouraging to any statistician hoping for a more active role for analytics in policy formulation, implementation, and evaluation.

Situated within the office of the NIGMS director, the Office of Program Planning, Analysis, and Evaluation (OPAE) grew rapidly in 2015, going from two to 10 full-time employees. This growth in both personnel and resources—achieved through a combination of new hires and reassignments of existing positions—reflects the NIGMS commitment to ensuring a heightened level of stewardship and maximal return on investment for tax-payer dollars.

To that end, the OPAE focuses on performing data-driven analyses and evaluations of both NIGMS research programs and funding mechanisms and on communicating the results of such analyses to key decision-makers within the institute and National Institutes of Health (NIH). Its team of multidisciplinary data scientists puts the power of data analytics and statistics to use in their advisory capacity to

the institute's leadership, reporting on such matters as trends in grant applications, funding decisions, research outcomes such as publications and citations, and other data relevant to the efficient and effective administration of programs and policies.

Most exciting to me, I've observed that OPAE analyses are not rejected, ignored, or shelved. Instead, NIGMS leadership actively embraces the role of analytics as a crucial part of a data-driven, accountable decision-making process. As a result, data generated through the OPAE's analyses are consistently used to inform the forward momentum of the institute against an ever-changing landscape of science, technology, fiscal responsibility, and legislative policy.

Informing Policy

One example of how the OPAE's data analyses contribute to decision-making can be observed in its recent analyses of laboratory productivity as a function of the amount of funding received from both NIGMS and NIH sources.

Building on a prior analysis that focused on outcomes from a single year, this work looked at scientific funding versus productivity over a three-year period and used a broader set of metrics than were considered in earlier analyses. OPAE's analysis illustrated the law of diminishing returns, with funding beyond a certain threshold not producing proportional gains in productivity as measured by publication and citation rates.

NIGMS director, Jon Lorsch, presented these data to the institute's advisory council in September of 2015. In particular, the data provided firm footing to defend the institute's "750k policy" that

stipulates grants to investigators who would have more than \$750,000 in funding from all sources undergo an additional round of review by the institute's advisory council.

Some stakeholders mistakenly perceive the policy as a hard cap on funding, while others focus on specific counter-examples of highly funded investigators who are also perceived to be highly productive.

Having concrete data has been key to NIGMS' decision to continue implementation of its 750k policy. In addition, these results suggest funding more labs at lower levels may achieve better returns than funding fewer labs at higher levels, providing support for NIGMS' decision to diversify rather than concentrate its portfolio. This insight informed the design of the recently launched Maximizing Investigator's Research Award funding mechanism, which was developed in part to contribute to the breadth and diversity of the institute's research portfolio while maximizing scientific creativity and flexibility.

Not only has this productivity analysis played an important role in informing policy formulation within NIGMS, but the institute's leadership is making a concerted effort to communicate and disseminate the findings more broadly. For instance, these results were shared with the directors of other NIH institutes and centers to help inform considerations related to the effective funding of investigators in challenging or unpredictable fiscal times. A short video also was created by Lorsch for the biology outreach site iBiology, presenting these data and his thoughts about their implications to the scientific community at large and the general public. You can view this video at <http://bit.ly/1USXVmH>.

Evaluating Programs

As I noted above, the institute's primary role is to maximize the potential for important scientific discoveries while ensuring a return on taxpayers' investments in the areas of fundamental biomedical research and training. To this end, OPAE is developing metrics and techniques for evaluating the institute's research programs and funding mechanisms. In the last year, OPAE conducted several focused data analyses to support outcomes evaluations of two major NIGMS programs: the Biotechnology Research Resources program, which funds numerous centers to develop novel technologies and provide research resources across a wide range of scientific fields, and the National

Centers for Systems Biology program, which has provided more than \$350 million since 2003 to promote development of multidisciplinary research, training, and outreach focused on systems-level biomedicine.

Bearing in mind the collaborative nature of science, the OPAE also recently used geographic analysis of collaboration networks to evaluate the efficiency and synergy of program project grants and the contributions of team-based versus individual science. Further, the OPAE used yet a different approach to determine whether the R37 MERIT awards are achieving their intended goal.

The R37 MERIT award is a modification of the traditional R01 research project grants and is awarded to highly meritorious investigators to provide an extended period of stable funding to allow them to take more research risks. Using medical subject headings (MeSH terms), the OPAE measured changes in scientific focus over the life of these awards to assess the extent to which R37-funded investigators branched out into more diverse areas of research relative to their R01-funded counterparts.

Supporting a Data-Driven Institute

As the above examples illustrate, the OPAE contributes to ensuring that robust, reproducible, and meaningful data inform the institute's pursuit of its mission. Currently, the office is in the process of creating a performance monitoring dashboarding system so program officers and other staff can readily access data related to the institute's performance in the pursuit of the goals listed in its strategic plan. Development of this dashboarding capability is part of a broader effort to expand the capacity of the institute to access, analyze, communicate, and use different data types.

Staff members within the OPAE are also working to build relationships with other NIH institutes and centers and with institutions outside the NIH to access a wider range of data and broaden portfolio analysis techniques. Representatives from the OPAE are also participating in a new NIGMS initiative to assess the ways in which collaborative science is currently supported and whether development of alternative mechanisms is warranted.

Collectively, these examples illustrate that the curation, analysis, visualization, and communication of robust, reproducible, and meaningful data play an important role in many of the NIGMS' functions. Statisticians rejoice! ■

Learning on the Left Coast: CSP Has Another Successful Year



ASA President Jessica Utts shares a video clip showing how statistics are presented in the media during her keynote presentation at CSP 2016.

Jim Rutherford, CSP Steering Committee Chair

The Conference on Statistical Practice (CSP) expanded its boundaries by visiting the West Coast this year. The ASA's 5th meeting for statistical practitioners was the biggest yet, with more than 550 attendees at the Westin San Diego February 18–20.

Photos by
Megan Ruyle and
Sara Davidson



Micah Thornton, right, of Southern Methodist University Darwin Deason Institute for Cyber Security, talks about his poster titled "Sample Size Calculations Using Techniques from Power Analysis."



Conference attendees chat with exhibitors during a break.



Kim Love-Myers discusses her poster titled "Moving from Academia to Private Practice."



Peihua Qiu of the University of Florida teaches a short course titled Modern Statistical Process Control Charts and Their Use as a Tool for Analyzing Big Data.



CSP 2016 conference attendees talk during a lunch break.

Participants heard talks such as "Effective Data Visualization: Understanding What the Mind Sees" and "Machine Learning Variable Selection for Credit Risk Modeling." CSP also featured short courses ranging from bootstrap methods and permutation tests to adaptive designs, as well as tutorials, exhibits, poster sessions, practical computing demonstrations, social events, and the keynote address provided by ASA President Jessica Utts.

CSP continues to grow each year, highlighting the importance of a conference dedicated to

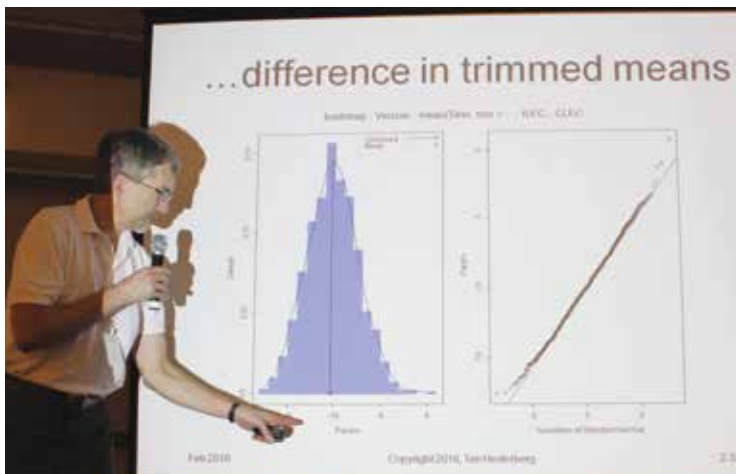
servicing the needs of statistical practitioners by providing a forum to learn, share, and discuss statistical techniques, innovations, and best practices. Still, the small size allows for a more personal environment, making it easier for attendees to participate in discussion during the sessions and courses and connect with each other during the scheduled break times. The shortest talks are 45 minutes to allow thorough discussion. By design, the CSP conference space is generally one common area in which the exhibitor booths,

MORE ONLINE

Look for all this and more in Jacksonville, Florida, which will host CSP 2017. www.amstat.org/meetings/csp/2017



Sally C. Morton of the University of Pittsburgh presents her talk about business acumen.



Tim Hesterburg of Google teaches during a short course titled Bootstrap Methods and Permutation Tests.

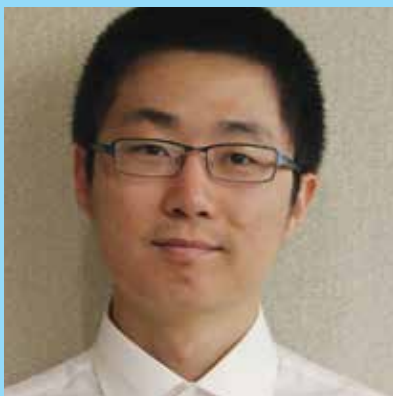


Gail Walker listens as Felicia Hardnett of the CDC discusses her poster, which focuses on three classes of statistical methods for comparing survival after AIDS diagnosis across population subgroups.

AWARD WINNERS



JOHN J. BARTKO AWARD
Joy Houchun Liu, Cornell University



LINGZI LIU AWARD
Peng Liu, University of Pittsburgh



LESTER R. CURTIN AWARD
Brittany Bailey, The Ohio State University

opening mixer, poster sessions, continental breakfasts, and breaks are shared. Every year, we receive comments regarding the advantages of the unique set-up and small size that allow for enhanced networking.

One of the most popular themes continues to be “Communication, Impact, and Career Development.” The courses and sessions in this theme provide participants with tools that can be used to enhance communication with colleagues and customers, have a positive impact on their organization, and develop leadership skills.

The CSP Mentoring Program also continues to be a success. Developed by the Committee on Applied Statisticians, the program establishes 1:1 mentoring relationships to help provide an opportunity to enhance personal and professional development goals. The program was limited to 40 participants and filled quickly.

For the second year, we recognized outstanding student posters from great contributions. The CSP 2016 Best Student Poster Award went to Micah Thornton of Southern Methodist University Darwin Deason Institute for Cyber Security for “Sample Size Calculations Using Techniques from Power Analysis.” The runners-up were Brittney Bailey of The Ohio State University for “Classroom to Collaboration: A Grad Student’s Tips for a Successful Transition” and Sophi Yu-Pu Chen of the University of Michigan for “A Web-Based System for Randomized Assignment in Clinical Trials Using Minimization.” ■



CSP 2016 attendees check out exhibits during the conference.

Christine Franklin Named First ASA K–12 Statistical Ambassador

The ASA is pleased to announce Christine Franklin as the inaugural ASA K–12 Statistical Ambassador. Franklin will provide leadership in the creation and presentation of professional development materials for teacher educators and teachers. She will present at national conferences, conduct workshops, collaborate with ASA chapters to enhance their education initiatives, and assist in outreach to the STEM education community.

Franklin is a recognized leader in K–12 statistics education. She is the lead author of the GAISE Pre-K–12 and SET reports, a proponent of the inclusion of increased statistics content in the Georgia K–12 standards, a recent Fulbright Scholar focusing on statistics education in New Zealand, an ASA Founders Award recipient, a former AP Statistics chief reader, a member of the presidential initiative workgroup to provide career information to AP and other K–12 teachers, and the current chair of the ASA/NCTM Joint Committee on Curriculum in Statistics and Probability. She also has authored or co-authored two textbooks and numerous articles and book chapters related to K–16 statistics education. Finally, she was a key member of the National Science Foundation–funded LOCUS project, chairing the committee that developed statistical assessment items for grades K–9.

As her credentials affirm, Franklin is a true statistics education ambassador. Her retirement from the University of Georgia at the end of this academic year creates a unique opportunity for the ASA to formalize this role and share her passion with more teachers. It was Franklin’s Fulbright experience working at the K–12 level internationally that brought her awareness of the great need for supporting efforts in statistics at K–12 internationally, not just in the United States. Franklin will start as the K–12 statistical ambassador in September to expand her statistics education work with K–12 teachers, teacher educators, and other stakeholders.

The Common Core State Standards for Mathematics adopted by most states and the Next



Christine Franklin

Generation Science Standards include increased statistics content, especially at the middle- and high-school levels. With the recent *Statistical Education of Teachers (SET) Report*, it is clear there is a need for professional development for teacher educators in addition to expanded professional development for pre-service and in-service teachers.

The ASA and National Council of Teachers of Mathematics (NCTM) released a joint statement about the importance of and need for preparing pre-service and in-service teachers to teach the increased statistics content in the standards. To enhance teacher training and student learning in these areas, teachers need access to materials and professional development supported by statistics education research and tied to current statistics requirements in the standards.

The ASA currently provides teacher professional development through the Meeting Within a Meeting (MWM) Statistics Workshop, Beyond AP Statistics Workshop, and K–12 statistics education webinars. However, more outreach is needed to make a national impact, and the timing is critical. Through the new K–12 statistical ambassador position, we will advance the national dialogue to prominently include the need for every child to be able to apply statistical thinking in problem-solving. This will not only contribute to K–12 education, but will ensure that policymakers and decision-makers recognize the value of the statistics discipline. In light of the 2016 update of the *GAISE College Report* and the updated Curriculum Guidelines for Undergraduate Programs in Statistical Science, the ambassador will also promote collaboration between K–12 and undergraduate statistics education, including teacher educators.

Big Data has focused the nation’s attention on data science and new standards have raised the expectations for both students and teachers, so the timing is right for a K–12 statistical ambassador. Franklin will be available to ensure that statistics education is recognized as central to ensuring all children are “college and career ready.” ■

ASA Welcomes Slate of New Editors

The ASA welcomes the following incoming editors:

JASA Applications and Case Studies and
Coordinating Editor: **Montserrat Fuentes**,
North Carolina State University

Fuentes completed her editorship of the *Journal of Agricultural and Biological Statistics* at the end of 2015 and transitioned immediately to editor of *JASA Applications and Case Studies* and coordinating editor. She earned her PhD in 1998 from The University of Chicago and has been on the North Carolina State University faculty since then. Fuentes possesses a strong research record, including more than 70 refereed journal articles. Her research work is focused on statistical methods for environmental data.

Fuentes' term is from 2016–2018, and she takes over for outgoing editor, Joseph Ibrahim of The University of North Carolina at Chapel Hill.

Search Committee: Hal Stern (chair), Sudipto Banerjee, David Banks, Marina Vannucci

Journal of Business & Economic Statistics Co-Editors:
Todd Clark, Federal Reserve Bank of Cleveland,
and **Rajeev Dehejia**, New York University

Clark earned his PhD in economics from the University of Michigan and is currently vice president of macroeconomic policy at the Federal Reserve Bank of Cleveland. He has made important methodological and empirical contributions in forecasting and macroeconomics and published extensively in econometrics, statistics, and economics journals. Clark's work at the Federal Reserve makes him especially well suited to judge the importance of empirical papers in macroeconomics and finance as an associate editor.

Dehejia is professor at the Wagner School of Public Service of New York University. He is a prominent researcher in empirical microeconomics, development economics, and statistical methods for causal inference and program evaluation, including propensity score analysis. He has published extensively in econometrics, statistics, and economics journals and has served as an associate editor for the *Journal of Business & Economic Statistics* since 2010. He is also a former associate editor for the *Journal of the American Statistical*

Association and former co-editor of the *Journal of Human Resources*.

Clark and Dehejia will serve as co-editors from 2016–2018, taking over from Rong Chen of Rutgers University and Shakeeb Khan of Duke University.

Search Committee: Keisuke Hirano and Jonathan Wright (co-chairs), Elie Tamer, Mark Watson, and Jeff Wooldridge

Journal of Computational and Graphical Statistics:
Dianne Cook, Monash University

Cook holds a PhD from Rutgers University and is a fellow of the American Statistical Association. Her research is in data visualization, exploratory data analysis, multivariate methods, data mining, and statistical computing, resulting in more than 50 journal articles and book chapters, a book on interactive graphics, and numerous open-source software products, including *xgobi*, *ggobi*, *cranvas*, *tourr*, *tourGui*, *GGally*, and *nullabor*. Cook has developed new methods for visualizing high-dimensional data using tours, with projection pursuit guidance and manual control, pipelines for interactive graphics, and a grammar of graphics for biological data. Her most recent work focuses on bridging the gap between statistical inference and exploratory graphics. She plans to enhance the reproducibility of the methods in articles published in *JCGS*.

Cook's term is from 2016–2018, taking over for Thomas Lee of the University of California at Davis.

JCGS Management Committee: Susan Holmes (chair), Roy Welsch, George Michailidis, Hadley Wickham, and Berwin Turlach

Technometrics: **Dan Apley**, Northwestern University

Apley is familiar with *Technometrics*, having served two terms as an associate editor. His research record demonstrates in-depth knowledge of areas that are high on the journal's agenda and includes publications on statistical process control with complex data structures, engineering statistics, Gaussian process modeling, and applications involving Big Data. All are areas in which *Technometrics* has established a strong presence, and members of the management committee view Big Data as an area that holds great potential for the journal.

Apley will continue to promote areas that are established strengths of *Technometrics* while pointing to directions under the general heading of “analytics” that can serve as springboards to emerging and exciting directions in statistical research and application. He also noted the expanding role of service organizations in industry and the importance to them of analytics.

Apley will serve as editor-elect for 2016, and his term will be from 2017–2019, taking over for Peihua Qiu of the University of Florida, Gainesville.

Technometrics Management Committee: David Steinberg (chair), Connie M. Borrer, Ronald Does, Doug Montgomery, Robert Mee, Dean Neubauer, and Scott A. Vander Wiel

Journal of Statistics Education: Soma Roy, California Polytechnic State University

Roy holds a PhD in statistics from The Ohio State University and has been involved with *JSE*—first as a referee, and then as associate editor and editor of data sets and stories—since 2008. She has a great deal of relevant teaching experience and the support of colleagues who understand and appreciate the journal. These connections are vital to the success and continued growth of *JSE*.

Roy presented the search committee with a number of ideas in her vision for *JSE*, including ideas for new columns and sections and topics for special issues.

Roy’s term will be from 2016–2018, taking over for Michelle Everson of The Ohio State University.

JSE Search Committee: John Gabrosek (chair), Jackie Dietz, Bob Stephenson, and Chris Franklin

Journal of Nonparametric Statistics: Jun Shao, University of Wisconsin

Shao has a PhD in statistics from the University of Wisconsin and brings an array of academic and industry experience to *JNPS*. He is a fellow of the ASA and Institute of Mathematical Statistics and served as president of the International Chinese Statistical Association in 2007. His editorial experience includes a term as co-editor for the *Journal of System Science and Complexity*, *Journal of Multivariate Analysis*, and *Sankhya* and associate editor of the *Journal of the American Statistical Association* and *Statistica Sinica*.

Shao’s term is from 2016–2018, and he takes over for Irene Gijbels.

JNPS Search Committee: Suojin Wang (chair), Ian McKeague, Alan Welsh, and Lijian Yang

Statistical Analysis and Data Mining: Niall Adams, Imperial College, London

Adams has extensive experience in statistical data mining as both an academic researcher and a practitioner. His awards have been both as an individual (Winton Research Prize, 2011; Rector’s Award for Excellence in Research Student Supervision, 2012) and as part of a team (“The Engineer” Technology and Innovation Award, Aerospace and Defense category, 2009, as a co-leader; Credit Collections and Risk, Contributions to the Credit Industry, 2012, as a team member). He has served on the editorial panels for *Applied Statistics* and *Journal of the Royal Statistical Society Series C* (2008–2012) and the editorial board for *Statistical Analysis and Data Mining* (2009–2014).

Adams’ term will run from 2016–2018, taking over for David Madigan.

Statistical Analysis and Data Mining Search Committee: Joe Verducci (chair), Xiaotong Shen, and Cynthia Rudin

SIAM/ASA Journal on Uncertainty Quantification: Dave Higdon, Virginia Tech University

Higdon is a dominant figure in the development and application of complex models and advancing the area of uncertainty quantification (UQ). His publication record is extensive; he co-chaired the influential National Research Council report on UQ in 2012.

He also played an important role in the establishment of the *Journal on Uncertainty Qualification (JUQ)* and currently serves as an associate editor. Higdon has worked extensively with applied mathematicians and other scientists, especially during his tenure at Los Alamos National Laboratory. His statistical expertise and stature is of the highest, an important consideration in the role of editor-in-chief at *JUQ*. His new position at Virginia Tech offers the potential for widening *JUQ*’s scope to include complex social science models.

JUQ Search Committee: Jerome Sacks (chair), James Berger, and Max Morris

Journal of Survey Statistics and Methodology: Roderick Little, University of Michigan

Little has extensive editorial experience, including serving as coordinating and applications

editor for the *Journal of the American Statistical Association* from 1992–1994, associate editor for the Applications and Theory and Methods sections of *JASA*, and associate editor for *Biometrics*. He also has served as co-chair of the advisory committee of *JSSAM* since the journal's inception (until stepping down recently because of the editorial search).

Little also has an extensive background and understanding of the field. He was a statistician at the World Fertility Survey from 1976–1980

and served as the inaugural associate director for research and methodology and chief scientist at the U.S. Census Bureau. While his primary position at Michigan is in biostatistics, he is also a research professor in the Survey Research Center at the University of Michigan Institute for Social Research and has published extensively on survey research topics.

JSSAM Search Committee: Michael Link (chair), Rachel Caspar, J.K.N. Rao, Peter Miller, and Mary Thompson ■

Senior Statisticians Talk Disability Statistics



From left, first row: Mary Batcher, Jennifer Madans, Monroe Sirken, Tom Jabine, Barbara Mader, Doug Samuelson. From left, middle row: Elizabeth Margosches, NJ Scheers, Walter Rosenkrantz, Carl Pierchala, Maurice Owens, Dan Kasprzyk, David Whitford, Larry Wiener, Mel Kollander. From left, back row: Mike Messner, Fritz Scheuren, David Nolle, Clifton Bailey, Jerry Gates, Mike Cohen, Pepi Lacayo.

The Washington, DC, senior statisticians' monthly gathering had about 25 attendees in February, including Mary Batcher, candidate for ASA president; Tom Jabine; and Monroe Sirken.

Jennifer Madans, associate director for science at the National Center for Health Statistics and the 2015 honoree for the Roger Herriot Award for Innovation in Federal Statistics, gave a talk titled "The Coming of Age of Disability Statistics." In it, she addressed some of the challenges of measuring disabilities so the data can be compared internationally, including data

from third-world countries. Madans and her colleagues took the data from fairly nonexistent in 2000 to today, when countries can compare how well those with disabilities are functioning in their countries.

Since its founding, the society has grown from a few participants to more than 70 members. If you are interested in attending a future meeting, contact Mel Kollander at mellk@erols.com or Mike Fleming at charles.fleming@bhox.com. Each meeting is limited to 35 attendees, and the next meeting is scheduled for September.

SAMSI Poised to Help Hone Gravitational Wave Astronomy



Aerial view of the LIGO detector in Livingston, Louisiana; a twin detector is located in Hanford, Washington.

Jamie Nunnelly, SAMSI Communications Director

A long time ago in a galaxy far, far away, two large black holes—each with a mass of about 30 suns—reached the end of an aeons-long orbital dance. In the final second of their separate existences, they spiraled toward each other, whirling with a frequency that quickly rose from tens to hundreds of cycles per second. At last, they touched, then violently merged in the space of about 20 milliseconds, producing a single black hole that quickly settled down to a bloated, lone existence.

Had a video camera been present, it would likely have seen little; black holes are black, after all, regions where gravity is so strong that not even light can escape. Yet during that final merger, the power emitted was larger than all the power being emitted in light by all the stars in all the galaxies in the observable universe.

The merger shone, not in electromagnetic waves, but in gravitational waves. The black hole binary's dance continually sloshed the fabric of space and time in its vicinity, sending out waves carrying news of the invisible event as fluctuations in the spatial separations of objects, and in the flow of time. They followed paths outward from the merger in all directions at the speed of light, diminishing in amplitude but maintaining their shape, an encoding of the story of the merger in the dynamics of spacetime. After a billion-year journey, the waves reached Earth.

This is not the start of a science fiction tale. On September 14, 2015, the waves from that distant merger met the Laser Interferometer Gravitational wave Observatory (LIGO) and produced a signal, the culmination of more than four decades of effort sponsored by the National Science Foundation (NSF) and international sources. Months of analysis by many dozens of scientists confirmed its reality and enabled detailed measurement of the properties of the merging black holes, and of the final

hole. The LIGO project announced the discovery to the world on February 11, 2016, dubbing the event GW150914. Now, the NSF's Statistical and Applied Mathematical Sciences Institute (SAMSI) will help astronomers take the next steps in making the most of this and future gravitational wave discoveries.

In November of 2014, SAMSI sought input from the astronomical community for a year-long program that would gather astronomers, statisticians, and applied mathematicians to address challenging interdisciplinary problems in astronomy. Led by statistician G. Jogesh Babu of Penn State University, a team of scientists identified a set of timely research directions under the overarching and overlapping themes of time-domain astronomy and survey-based astronomy. With renovations to LIGO nearing completion, gravitational wave data analysis was quickly identified as a focus area, along with exoplanets (which are detected via time series measurements), synoptic surveys (an emerging mode of large-scale automated time-domain observing), and cosmology.

In September of 2015, scientists gathered at SAMSI to plan the 2016–2017 Program on Statistical, Mathematical, and Computational Methods for Astronomy (ASTRO). The planning team included LIGO scientists who had just learned of the candidate detection and had to keep it secret until confirmed.

Of five working groups planned for the ASTRO program, four will address LIGO data analysis challenges in concert with related challenges in other areas of time-domain astronomy (a fifth working group will focus on statistical problems in cosmology).

The ASTRO program is just the latest of several productive programs SAMSI has hosted to build interdisciplinary partnerships between astronomers, statisticians, and mathematicians. To read more about the ASTRO program, visit <http://bit.ly/1pxXjXr>. ■

Obituaries

John Michael

John Rhodes Michael passed away on January 7 after a long illness.

John was born and raised in the Washington, DC, area and graduated from Duke University in 1967. After graduation, he went on to serve in the United States Air Force as an intelligence officer/captain during the Vietnam War until 1973.

A scientist at heart, John forever pursued new ways of thinking and questioning traditional paradigms. So after his service in the Air Force, he continued his education and earned his PhD in statistical science from Southern Methodist University and another PhD in industrial organizational psychology from The George Washington University.

John worked as a research scientist and consultant and published numerous renowned scientific papers.

To read his full obituary, visit <http://bit.ly/220wtZp>.

Joseph Garcia

Joe Garcia passed away on August 27 after a short illness.

A technical director at Combustion Engineering and teacher at the Hartford Graduate center of Rensselaer, he “retired” to Newcastle, Maine, where he taught math and statistics at Southern Maine Community College.

Read more about Joseph at <http://bit.ly/1TMoqLk>.

Dattaprabhakar Vinayak (D.V.) Gokhale

Dattaprabhakar Vinayak (D.V.) Gokhale, emeritus professor in the statistics department at the University of California at Riverside, passed away February 27, 2016, shortly before his 80th birthday.

Studying under a Fulbright travel grant from the Institute of International Education, D.V. earned his degree from the University of California at Berkeley under the mentorship of Erich Lehmann. Following his graduation, he spent a year at the University of Pune, India, before joining what was then the department of biostatistics at UC-Riverside in 1970. The department subsequently became

the department of applied statistics and was chaired by F. N. David. D.V. was the department chair at UC-Riverside from 1985–1988 and retired in 2000, but remained active in the department through his research with colleagues, periodic voluntary teaching, and an array of social- and career-oriented events with students.

D.V. was a recognized scholar for his contributions to information theory, discrete data analysis, and nonparametric statistics that included the analysis of multidimensional contingency tables and correspondence analysis. In 1978, he published a book with Solomon Kullback titled *Information Approach to the Analysis of Contingency Tables*. This text was the basis for his popular graduate course in the analysis of discrete data.

D.V. is a fellow of the American Statistical Association and an elected member of the International Statistical Institute.

During his career at UC-Riverside, D.V. mentored 13 PhD students and was a strong advocate for many others. Affectionately known as “Dr. G,” D.V. was an open and embracing figure in the department, always looking for the potential in every student and searching out opportunities for them to demonstrate it. He was a regular reader of Advanced Placement Statistics exams. In 2012, the department established an annual Gokhale Lecture, in which speakers primarily aim their talks to undergraduate students.

In 2006, through donations and his own personal bequest, D.V. established the D.V. Gokhale International Grants in Statistics Program in collaboration with the Institute of International Education. The program is designed to enable statistics students and faculty to participate in an exchange program between India and the United States.

D.V. will be remembered as a kind and considerate friend by all who had occasion to interact with him for his ready smile and inclination to be genuinely interested in listening to other people. In addition to his wife, Asha, he is survived by a son, Vinay, and his wife, Rani; a daughter, Dalika, and her husband, Robert; and four grandchildren.

sectionnews

Physical and Engineering Sciences

Byran Smucker, JSM Program Chair-Elect

The Section on Physical and Engineering Sciences (SPES) is sponsoring the following three roundtable sessions at JSM 2016 in Chicago:

- Learn More About the Industrial Virtual Collaboratory, an A.M. roundtable session hosted by Jennifer van Mullekom of Dupont
- Is Your Mixed Model Analysis Mixed Up?, a P.M. roundtable hosted by Phil Gibbs of SAS
- Online Experimentation: What It Is and Why It Is So Important, a P.M. roundtable hosted by Peter Qian of the University of Washington

If you are interested in attending these sessions, registration is required. More information about these roundtables can be found at www.amstat.org/meetings/jsm/2016. ■

Biometrics

Edited by Sheng Luo, Biometrics Section Publications Officer

The ASA Biometrics Section invites applications for funding to support projects developing innovative outreach projects focused on enhancing awareness of biostatistics among quantitatively talented U.S. students. Of particular interest are projects that will encourage students to pursue advanced training in biostatistics.

The section anticipates funding up to three projects this year, with total funding of \$3,000–\$5,000 per project. The project timelines

are 1–1.5 years. Investigators at all levels are encouraged to apply; however, award recipients must be ASA and Biometrics Section members prior to project initiation.

A three-page application is due May 30 and should be in the following format:

- Title, Objectives, and Specific Aims
- Background, Significance, and/or Rationale
- Design and Methods
- Deliverables/Products
- Personnel/Budget

Allowable expenditures include supplies and other program costs, domestic travel (when necessary to carry out the project), professional expertise (e.g., instructional designer or webmaster), and cost of computer time. Expenditures not allowed are secretarial/administrative personnel, tuition, foreign travel, faculty salaries,

research expenses, and honoraria and travel expenses for visiting lecturers to the investigator's home institution.

A project period with a start date no earlier than July 1 and an end date no later than December 31 also should be specified.

Applications should be submitted electronically to the Strategic Initiatives Subcommittee chair, Tanya Garcia, at tpgarcia16@gmail.com. All investigators will be expected to submit a brief report at the conclusion of the project to the subcommittee chair. Questions should be addressed to either Garcia or to the subcommittee co-chair, Page Moore, at PMoore@uams.edu.

The section will also sponsor five continuing education courses and six invited sessions at the 2016 Joint Statistical Meetings in Chicago. Visit last month's section news at <http://bit.ly/1SzXjSq> for details. ■

Integrating Quality and Statistics: A Transformative Alliance

QUALITY AND PRODUCTIVITY RESEARCH CONFERENCE

DoubleTree by Hilton • Tempe, Arizona • June 14–16, 2016

The goal of the conference is to stimulate interdisciplinary research among statisticians, scientists, and engineers in quality and productivity, industrial needs, and the physical and engineering sciences.

For information on the conference, contact either Rong Pan at rong.pan@asu.edu or Steven Rigdon at srigdon@slu.edu.

WWW.QPRC2016.COM

The deadline for submitting a contributed paper has been extended to May 1, 2016.



BIostatISTICS FACULTY
Memphis, TN

The Department of Biostatistics at St. Jude Children's Research Hospital (www.stjude.org/biostatistics) invites applications for two faculty positions at the Assistant or Associate Member (Professor) level depending upon qualifications. Candidates must have a PhD in Biostatistics or Statistics and a record of peer-reviewed publications showing evidence of (for Assistant Member, a potential of) productive methodological research.

For the 1st position, preference will be given to candidates with experience and statistical research interests in designing and conducting clinical trials and a commitment to collaborative research with clinical and laboratory investigators. Experience and/or interest in Systems Biology, Statistical Genomics or Bioinformatics are also highly desirable.

For the 2nd position, preference will be given to candidates with statistical research interests in Survival Analysis, Longitudinal Analysis or Multivariate Analysis and a commitment to collaborative research with clinical investigators. Experience in designing and conducting epidemiological studies is highly desirable.

Continued independent statistical research motivated by biomedical collaborations is expected of the successful applicant.

The Department staff includes thirteen faculty positions, two post-doctoral fellows, twenty-two master's level biostatisticians, eight computer scientists and support staff. Applicants must demonstrate excellent oral and written communications skills and be proficient in computing. Compensation is very competitive and commensurate with experience.

Send letter of interest, CV, and have three reference letters sent to: kumar.srivastava@stjude.org or Dr. Deo Kumar Srivastava, Interim Chair, Dept. of Biostatistics, St. Jude Children's Research Hospital, 262 Danny Thomas Place, Memphis, TN 38105-3678

EE/AAE

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.

Maine

■ Assistant or Associate Professor (applied statistics). The Husson University School of Science and Humanities invites applications for a full-time, ranked faculty position in applied statistics to begin in fall 2016. Teaching responsibilities will include statistics courses at the general education level, as well as upper-level courses. For complete job details, please visit: <http://bit.ly/24MwVJQ>. Job ID: 7866534. EOE.

New Jersey

■ Vice President, Statistics & Psychometrics. Educational Testing Service (ETS), Princeton, NJ, seeks a leader for its R&D division. Will provide strategic, tactical, and financial oversight and be responsible for data analysis and psychometric support of major testing products and contracts, and psychometric research. Requires doctorate and 12 years of experience. For a full list of responsibilities and to apply, please visit <http://bit.ly/VP-Psychometrics>. EOE.

Ohio

■ The Cleveland Clinic Department of Quantitative Health Sciences is recruiting for faculty and master's-level biostatisticians and statistical programmers. Details for all positions, as well as application instructions, are on our website: www.lerner.ccf.org/qhs/jobs/ EOE.

Pennsylvania

■ Janssen R&D, LLC, a Johnson & Johnson company, is seeking a senior biostatistician, nonclinical statistics & computing, in Spring House, PA. Responsibilities include experimental design, data analysis, interpretation, and communication of results. MS in statistics with 4+ years experience or PhD in statistics with 2+ years of experience. Familiarity with nonlinear modeling, Bayesian methodologies, and generalized mixed modeling is desirable. Please visit <http://bit.ly/1RSnLWT> for more information. EOE.

South Carolina

■ The multidisciplinary hearing research program in the department of otolaryngology-head and neck surgery, Medical University of South Carolina, is searching for a collaborative faculty colleague with expertise in applied multivariable longitudinal analyses, multi-level modeling, nonlinear regression, Bayesian methods, and nonparametric testing. Strong skills needed in descriptive analysis, modeling of data, and graphic interfaces. Master's degree or PhD in applied statistics, biostatistics, or related fields. <http://bit.ly/24MwRtw>. The Medical University of South Carolina is an EEO/AA employer.

Texas

■ Biostatistics faculty position. Assistant/associate professor (tenure-track) to work in Division of Clinical and Translational Sciences (DCTS) within Internal Medicine (IM) at The University of Texas Health Science Center at Houston (UTHealth). Will work closely with a multidisciplinary team of biostatisticians, epidemiologists, and clinicians. Interested candidates should refer to the job posting at <http://bit.ly/1M3eMMn>. Click "Faculty/Staff Physicians" and enter the requisition #161268 for more information. The University of Texas Health Science Center at Houston is an EO/AA employer. M/F/D/V. 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.

■ The University of Texas at Dallas Department of Mathematical Sciences is seeking applications for a clinical professor position in actuarial science, to begin September 1, 2016. All areas of actuarial science will be considered. Curriculum vita, a letter of interest and descriptions of educational background and teaching experience, and at least three letters of reference should be submitted via ONLINE APPLICATION FORM: <http://bit.ly/21hy2N2>. AA/EOE.



An Employee-Owned Research Corporation*

EOE

Statistical Career Opportunities with Westat

Westat is an employee-owned corporation headquartered in Rockville, Maryland. We provide statistical consulting and survey research to the agencies of the U.S. Government and to a broad range of business and institutional clients. With a strong technical and managerial staff and a long record of quality research, Westat is a leader in the statistical services field.

We are currently recruiting for the following positions:

Senior Survey Sampling Statistician—International Surveys Westat is seeking a senior survey sampling statistician for work on international surveys in developing nations. This position requires a master's degree in statistics or survey research coupled with seven (7) or more years in sample survey design, or a PhD in statistics or survey research and five (5) or more years in sample survey design. Candidates would benefit from knowing SAS, R, and other statistical software packages although candidates are not required to do programming.

Senior Manager, Statistical Computing Unit This position requires candidates to have a strong statistical or other quantitative background and at minimum a master's degree in computer science, statistics, math, physics, or a related data science coupled with at least ten (10) years of experience in statistical or other data-intensive computing. Five (5) years of supervisory experience is also required.

Senior Survey Sampling Statistician This position requires a master's degree in survey sampling, statistics, survey research, or a related field with twelve (12) or more years in sample survey work or a PhD in survey sampling, statistics, survey research, or a related field and ten (10) or more years in sample survey work. Candidates would benefit from knowing SAS, R and other statistical software packages although candidates are not required to do programming.

Westat is an Equal Opportunity Employer and does not discriminate on the basis of race, creed, color, religion, sex, age, national origin, veteran status, disability, marital status, sexual orientation, citizen status, genetic information, gender identity, or any other protected status under applicable law. To apply, go to www.westat.com/careers.

www.westat.com

Join us this summer for

JSM 2016
CHICAGO

July 30–August 4

KEY DATES

May 2: Registration and housing open

June 1: Early registration deadline

June 29: Housing deadline

June 30: Regular registration deadline

July 21: Late registration deadline

Learn more at www.amstat.org/jsm.

Strength in Numbers



Join the 300+ strong and diverse community of Census Bureau mathematical statisticians at the heart of the Statistical quality of our demographic and economic census, surveys, and research.

Your work as a Mathematical Statistician at the Census Bureau

- Design sample surveys and analyze the data collected.
- Design and analyze experiments to improve survey questionnaires and interview procedures.
- Improve statistical methods for modeling and adjustment of seasonal time series.
- Perform research on statistical methodology that will improve the quality and value of the data collected.
- Publish research papers and technical documentation of your work.

Requirements

- U.S. citizenship
- Bachelor's, Master's or Ph.D with at least 24 semester hours in math and statistics (see website for more specifics on required coursework)

Apply at www.census.gov, click on Jobs@census, Headquarters and NPC Employment Opportunities, Mathematical Statistician

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

U S C E N S U S B U R E A U
Helping You Make Informed Decisions

U.S. Department of Commerce,
Economics and Statistics Administration,
U.S. Census Bureau

AMSTATNEWS

ADVERTISING DIRECTORY

Listed below are our display advertisements only. If you are looking for job-placement ads, please see the professional opportunities section. For more job listings or more information about advertising, please visit www.amstat.org.

misc. products and services

Illinois Institute of Technologyp. 21
Joint Program in Survey
Methodologycover 2

professional opportunities

St. Jude Children's Research Hospitalp. 45
U.S. Census Bureaup. 47
Westat.....p. 46

software

JMP Software from SAScover 4
Minitab..... centerfold
NCSS.....p. 17
Salford Systems..... centerfold
SAS Institute.....cover 3

SOCIAL CHATTER

What our followers are saying online

FOLLOW US



community.
amstat.org



www.facebook.
com/AmstatNews



@AmstatNews



www.instagram.
com/AmstatNews

Amstat News: The ASA releases a statement on p -values and statistical significance. Read it online for free in *The American Statistician*: <http://bit.ly/1p4Knb2>.



Nature News&Comment • @NatureNews

American Stats Assoc issues warning over misuse of P -values: <http://ow.ly/Z9Kgx> #pvalue

Nicholas Horton • @askdrstats

The *Nature News* piece should be required reading for all statisticians and data scientists!
[@AmstatNews](#)

SITW • @StatsInTheWild

The [@AmstatNews](#) taking an official position on p -values is a VERY big deal.

Stefan Müller • @stfnmlr

This statement might have a significant impact...
– no, let's better say long-lasting effect!
[@AmstatNews](#) #pvalue

Amy Hogan • @alittlestats

What do I <3 more? [@AmstatNews](#) statement on #pvalue or the transparency w/ the process that led to it? #statschat



Joana Amaral Paulo

FINALLY! Will include as a citation in several of my manuscripts...

Alex Sverdlov

Great news indeed! I bet this paper will hit 1K citations in 1 year.

This month, in honor of Math Awareness Month, we'll ask our followers to **look into their crystal balls and predict the next big stats trend**. Follow us to read the responses or send us one of your own. Don't forget to tag [@AmstatNews](#) and [#mathawarenessmonth](#) and follow [@MathAware](#).

Statistics

The release of SAS/STAT® 14.1 brings you even more statistical techniques for your data analysis needs.

SAS/STAT 14.1 Highlights

Generalized additive models by penalized likelihood estimation. Apply this technique, which provides automatic model selection by optimizing model fitting criteria, to your large data problems.

Imputation for survey data. Employ single and multiple hot-deck and fully efficient fractional imputation methods to handle nonresponse.

Analysis for spatial point patterns. Understand locations of random events, such as crimes or lightning strikes, and how other spatial factors influence event intensity.

Weighted GEE methods. Deal with dropouts in longitudinal studies with a method that produces unbiased estimates under the missing-at-random (MAR) assumption.

Proportional hazards regression models for interval-censored data. Apply these popular regression models in survival analysis when the data are interval-censored.

Additional model selection methods. Use the LASSO method for selecting generalized linear models or the group LASSO method for selecting general linear models.

Classification and regression trees. Use familiar modeling syntax to specify trees and display results with ROC plots as well as tree diagrams.

Bayesian choice models. Use Bayesian discrete choice models to model consumer decisions in choosing products or selection from multiple alternatives.

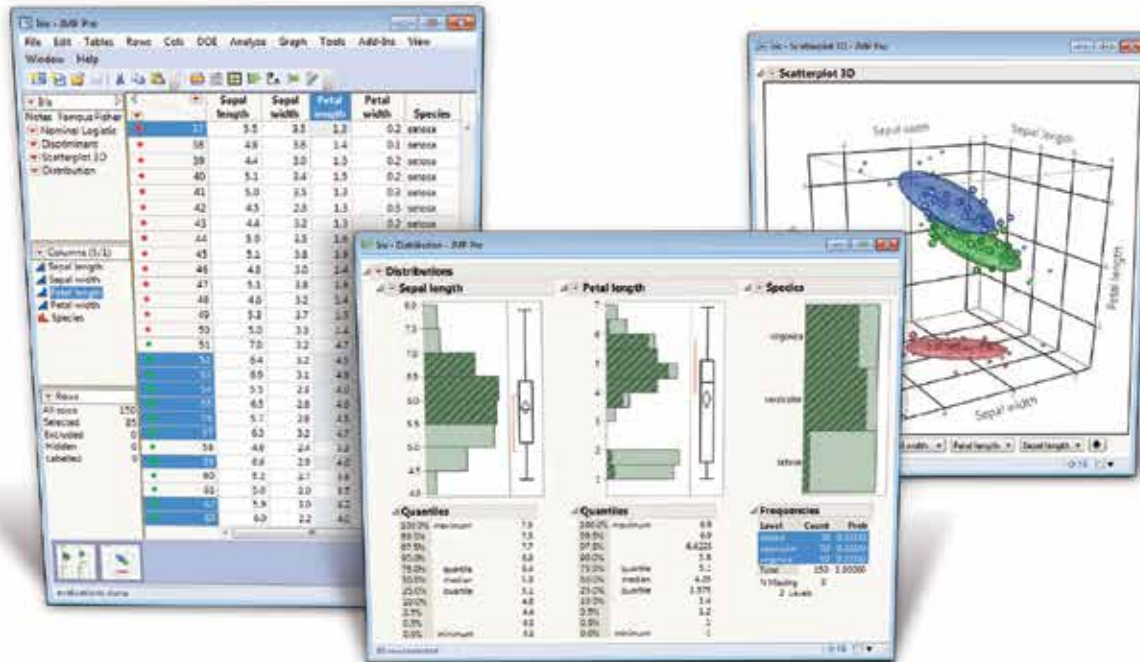
Item response models. Calibrate test items and evaluate respondents' abilities with item response models.

Recent SAS/STAT Highlights



To learn more
support.sas.com/statnewreleases

sas
THE POWER TO KNOW.



EXPLORE

Data analysis in flow

Introduced in 1989 with scientists and engineers in mind, JMP® software links powerful statistics to interactive graphics. It keeps data in flow, no matter whether it's small, tall or wide. A sampling of its capabilities:

- Regression, GLM and ANOVA
- Generalized Regression: Ridge, Lasso, Elastic Net*
- Mixed Models and Repeated Measures*
- Univariate and Bivariate Analysis
- Multivariate Analysis
- Data Mining Capabilities: Cross-Validation, Multi-Layer Neural Networks, Bootstrap Forests, Gradient-Boosted Decision Trees, Model Comparison*
- Cluster Analysis
- Nonlinear Modeling
- Graphical Application Development Environment
- Interactive Query Building for Connecting to Databases
- Automatic Recoding, Outlier Detection and Missing Value Imputation
- SAS®, R, MATLAB and Microsoft Excel Connections
- Time Series Analysis
- Design of Experiments
- Consumer and Market Research Methods
- Reliability and Survival Analysis
- Quality and Process Control
- Data Visualization, Mapping and Animated Graphs

*JMP Pro Only

Try JMP® 12 software! jmp.com/trial



Available for Mac® and Windows

