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IMS Bulletin

September 2016

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World Congress in Toronto

The World Congress in Probability and Statistics, which was hosted by the Fields Institute, Toronto, took place from July 11–15, 2016. There were over 350 participants. Program highlights included the IMS Wald Lectures (Sara van de Geer), Rietz Lecture (Bin Yu), Schramm Lecture (Ofer Zeitouni) and five IMS Medallion Lectures (Frank den Hollander, Vanessa Didelez, Christina Goldschmidt, Arnaud Doucet and Pierre del Moral). Bernoulli lectures included the Doob Lecture (Scott Sheffield), Laplace Lecture (Byeong Park), Bernoulli Lecture (Valerie Isham), Kolmogorov Lecture (Ruth Williams), Lévy Lecture (Servet Martinez), Tukey Lecture (David Brillinger), Ethel Newbold Prize Lecture (Judith Rousseau) and a Plenary Lecture (Martin Hairer).

On the Monday evening there was a reception in the Fields Institute atrium, following the IMS Presidential Address and awards session. On the Tuesday evening the Bernoulli Society sponsored a reception for young researchers at the popular PreNup Pub. Wednesday evening saw participants on board a banquet ship, cruising around Toronto Islands and Harbour.

Turn to pages 4 and 5 for photos from the conference. The program and further details are online at http://www.fields.utoronto.ca/programs/scientific/16-17/WC2016/index.html

Toronto's CN Tower

The Fields Institute is a centre for mathematical research activity—a place where mathematicians from Canada and abroad, from academia, business, industry and financial institutions, can come together to carry out research and formulate problems of mutual interest.

The Institute's mission is to enhance mathematical activity in Canada by bringing together mathematicians from Canada and abroad, and by promoting contact and collaboration between professional mathematicians and the increasing numbers of users of mathematics. The Institute supports research in pure and applied mathematics, statistics and computer science, as well as collaboration between mathematicians and those applying mathematics in areas such as engineering, the physical and biological sciences, medicine, economics and finance, telecommunications and information systems.

Everyone is welcome to register and participate in events at the Fields Institute. For more information, please visit our website at http://www.fields.utoronto.ca and follow the Institute on Twitter @FieldsInstitute, Facebook, and Instagram @fieldsinstitute.

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Executive Committee

IMS Members' News

Jerome Sacks Award for Outstanding Cross-Disciplinary Research

William F. Eddy, the John C. Warner Professor of Statistics (Emeritus) in the Department of Statistics at Carnegie Mellon University, is the 2016 winner of the National Institute for Statistical Science (NISS) Jerome Sacks Award for Cross-Disciplinary Research. William received the award for, *"serving as a model statistician engaged in cross-disciplinary research, including his pioneering work at the interface of statistics and computing, his research over several decades on functional Magnetic Resonance Imaging (fMRI) data, his contributions to the analysis of census data and statistics in forensic science, and especially for introducing hundreds of undergraduate and graduate students to cross-disciplinary research outside the classroom."* The NISS Board of Trustees established the Jerome Sacks Award in 2000 to honor Sacks' service as the founding director of NISS. The annual prize of $1,000, presented at the NISS JSM Reception, recognizes sustained, high-quality cross-disciplinary research involving the statistical sciences.
http://niss.org/about/awards/jerome-sacks-award-outstanding-cross-disciplinary-research

CF Jeff Wu named Inaugural Akaike Memorial Lecturer

The Institute of Statistical Mathematics (ISM) and the Japan Statistical Society (JSS) have inaugurated the Akaike Memorial Lecture Award under their joint sponsorship. A memorial to the legacy of Dr. Hirotugu Akaike, we hope that this lecture will be a valuable stimulus to the minds of younger colleagues and contribute to the development of the statistical sciences.

The inaugural lecture will be given by Professor C.F. Jeff Wu of Georgia Institute of Technology, School of Industrial and Systems Engineering. The lecture will be at the planning session of the JSS for the 2016 Japanese Joint Statistical Meeting, which will be held at Kanazawa University from September 4–7, 2016.

C.F. Jeff Wu was born in Taiwan in 1949. He obtained his BSc (Mathematics) from the National Taiwan University in 1971, and his PhD in Statistics from Berkeley in 1976. Prof. Wu has conducted vigorous and pioneering work on the theory of experimental design, EM algorithms and resampling. His support of industry has also been highly valued and he has received many awards in statistical quality control. He has long recognized the importance of data science; on entering his post as H.C. Carver Professor at Michigan University in 1997, he gave a speech titled "Statistics = Data Science?" in which he emphasized the role of analysis of large volumes of data and cooperation with people in fields outside of statistics. More recently, he has proposed new methods for experimental design, adapted to the procedures of experiments performed on computers (simulations). Prof. Wu has maintained an exemplary balance among theory, procedure and applications in his research. Since he first came to Japan in 1987 together with Prof. G.E.P. Box to observe quality control in industries, he has visited this country many times and continued exchanges with Japanese statisticians and the industrial sector. Prof. Wu has also visited ISM on several occasions to lecture and engage in discussions and debates with our young researchers.

International Biometric Society names Honorary Life Members

By a vote of the Representative Council of IBS, the International Biometric Society, three longtime members have been named Honorary Life Members of IBS. Two of them, Kaye Basford (Australasia Region) and Thomas Louis (ENAR), are IMS members. They were honored at an awards ceremony during the International Biometric Conference (IBC) in Victoria, BC, in July, along with Peter Bauer (Austro-Swiss Region).

IMS Special Lectures

IMS Special Lectures in 2017

The IMS sponsors several series of Special Invited Lectures, which are given by distinguished scientists at regular IMS meetings. The IMS Committee on Special Lectures chooses the recipients. Special Lectures are distinct from ordinary invited papers, which are chosen by the Program Committees for each meeting, and they are usually longer in length. Special lectures are of two types: named lectures (Wald, Neyman, Rietz, Le Cam, Blackwell and Schramm) and medallion lectures. Eight medallion lecturers are selected from the fields of Statistics and Probability each year.

In 2017, the Special Lectures will be given by:

Wald: Emmanuel Candes

Blackwell: Martin Wainwright

Schramm: Richard Kenyon

Eight Medallion lecturers: Thomas Mikosch, Takashi Kumagai, Marta Sanz-Solé, Edoardo Airoldi, Emery Brown, Subhashis Ghosal, Mark Girolami and Judith Rousseau.

Call for Nominations: IMS Special Lectures

The IMS Committee on Special Lectures is accepting nominations for IMS Named and Medallion Lectures. The following lectures are available for nomination in 2016.

- 2018 Wald Lecturer
- 2018 Neyman Lecturer
- 2018 Rietz Lecturer
- 2019 Medallion Lecturers

The deadline for nominations is October 1.

For more information visit: http://imstat.org/awards/lectures/nominations.htm

Call for Nominations: COPSS Awards

The COPSS Awards are multi-society awards and as such, are presented at the Joint Statistical Meetings each year. In 2017, four awards will be presented: the **Fisher Award and Lectureship**, the **Presidents' Award**, the **F. N. David Award**, and the **Snedecor Award**.

The nomination deadline for the 2017 Fisher Award is **December 15, 2016**; the deadline for the other awards is **January 15, 2017**. Only the winner of the Fisher award is announced before the JSM award ceremony.

Detailed instructions on award criteria and nomination instructions can be found under the tab "Our Awards and Winners" for each award, at the COPSS website http://community.amstat.org/copss/home

2016 Award winners

This year's Fisher lecturer was Alice Whittemore, Stanford University. The Elizabeth Scott Award was presented to Amanda Golbeck, University of Arkansas for Medical Sciences. The 2016 Presidents' Award was presented to Nicolai Meinshausen, ETH Zürich.

See the photographs of the recipients on page 6.

= access published papers online

IMS Journals and Publications

Annals of Statistics: Ed George and Tailen Hsing
http://imstat.org/aos
http://projecteuclid.org/aos

Annals of Applied Statistics: Tilmann Gneiting
http://imstat.org/aoas
http://projecteuclid.org/aoas

Annals of Probability: Maria Eulalia Vares
http://imstat.org/aop
http://projecteuclid.org/aop

Annals of Applied Probability: Bálint Tóth
http://imstat.org/aap
http://projecteuclid.org/aoap

Statistical Science: Peter Green
http://imstat.org/sts
http://projecteuclid.org/ss

IMS Collections
http://imstat.org/publications/imscollections.htm
http://projecteuclid.org/imsc

IMS Monographs and *IMS Textbooks:* David Cox
http://imstat.org/cup/

IMS Co-sponsored Journals and Publications

Electronic Journal of Statistics: Domenico Marinucci
http://imstat.org/ejs
http://projecteuclid.org/ejs

Electronic Journal of Probability: Brian Rider
http://ejp.ejpecp.org

Electronic Communications in Probability: Sandrine Péché
http://ecp.ejpecp.org

Current Index to Statistics: George Styan
http://www.statindex.org
log into members' area at imstat.org

Journal of Computational and Graphical Statistics: Diane Cook
http://www.amstat.org/publications/jcgs
log into members' area at imstat.org

Statistics Surveys: Donald Richards
http://imstat.org/ss
http://projecteuclid.org/ssu

Probability Surveys: Ben Hambly
http://imstat.org/ps
http://www.i-journals.org/ps/

IMS-Supported Journals

ALEA: Latin American Journal of Probability and Statistics: Victor Perez Abreu
http://alea.impa.br/english

Annales de l'Institut Henri Poincaré (B): Gregory Miermont, Christophe Sabot http://imstat.org/aihp
http://projecteuclid.org/aihp

Bayesian Analysis: Bruno Sansó
http://ba.stat.cmu.edu

Bernoulli: Holger Dette
http://www.bernoulli-society.org/
http://projecteuclid.org/bj

Brazilian Journal of Probability and Statistics: Francisco Louzada Neto http://imstat.org/bjps
http://projecteuclid.org/bjps

Stochastic Systems: Assaf Zeevi
http://www.i-journals.org/ssy/

IMS-Affiliated Journals

Probability and Mathematical Statistics: K. Bogdan, M. Musiela, J. Rosiński, W. Szczotka, & W.A. Woyczyński
http://www.math.uni.wroc.pl/~pms

World Congress in photos

IMS Presidents, future (Alison Etheridge), past (Richard Davis) and present (Jon Wellner)

Medallion lecturer Frank den Hollander listening to his introduction by Rick Durrett

Young researchers in the PreNup pub with Sara van de Geer

Kolmogorov lecturer Ruth Williams (right) was introduced by Tom Kurtz

Vanessa Didelez gave a Medallion lecture

Medallion lecturer Pierre del Moral, with Valerie Isham

A poster session

Schramm lecturer Ofer Zeitouni (right) with Greg Lawler

The Doob lecturer, Scott Sheffield (left), with plenary lecturer Martin Hairer

Tukey lecturer David Brillinger, with Iain Johnstone (photo of John Tukey behind them)

Ruth Williams (left) presented Medallion Lecturer Christina Goldschmidt with her medallion

Rietz lecturer Bin Yu

Medallion lecturer Arnaud Doucet

The Wald lectures were given by Sara van de Geer (left), introduced by Susan Murphy

The reception after the Presidential Address, in the Fields Institute atrium

Krzysztof (Chris) Burdzy (right) is the 2016 Carver Award winner

More photos at https://www.dropbox.com/sh/xnttbog5uqhlc3y/AACee6FldLOSiAvfVHexL664a

Some photos from JSM

At the COPSS awards ceremony, the Fisher lecturer was Alice Whittemore (below left); the Elizabeth Scott Award was presented to Amanda Golbeck (below right); and the 2016 Presidents' Award was presented to Nicolai Meinshausen (right). Two IMS Medallion lectures were given, by Nanny Wermuth (bottom left) and Gerda Claeskens (bottom right).

Photos: Eric Sampson / ASA

COPSS Presidents' Award winner, Nicolai Meinshausen, ETH Zürich

The R.A. Fisher Lecture was given by Alice Whittemore

Amanda Golbeck (center) was presented with the Elizabeth L. Scott Award

Medallion lecturer Nanny Wermuth was presented by Peter McCullagh

Medallion lecturer Gerda Claeskens, with Jean Opsomer

Profile: Susan Murphy

Photo: MacArthur Foundation

Susan Murphy

As we reported in the June/July issue, Susan Murphy was among five IMS Fellows elected this year to the National Academy of Sciences. We featured a profile of Larry Wasserman in the last issue, and we'll bring you profiles of the others—Steve Evans, Yuval Peres and Nancy Reid—in future issues

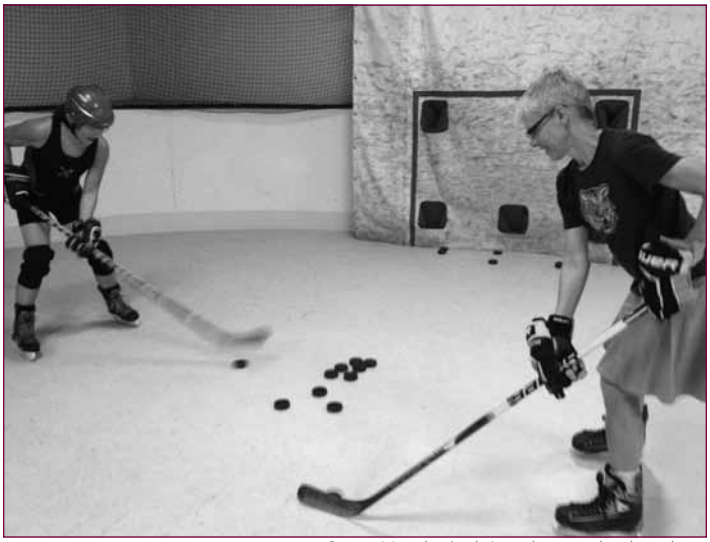
In May, Susan A. Murphy was elected to the US National Academy of Sciences. The NAS recognized Susan's innovative research, particularly her development of the sequential, multiple assignment, randomized trial (SMART), and her more recent work on just-in-time adaptive interventions (JITAIs). Susan has developed innovative research approaches to improve the personalization of treatment. SMART is an experimental design tool, allowing scientists to build empirically based interventions that adapt to patient characteristics and treatment responses. JITAIs use real-time data from mobile technologies to deliver personalized behavioral interventions exactly when they are needed. Susan's work has wide impact: SMARTs are used to address cocaine abuse, depression, problem drinking, obesity, ADHD and autism; JITAIs are mobile health interventions to help people, for example, quit smoking or increase activity levels.

Susan Murphy obtained her BS in Mathematics (in 1980) from Louisiana State University; an MS in Statistics (1983) from Tulane University; and her PhD in Statistics ("Time-Dependent Coefficients in a Cox-Type Regression Model" supervised by P.K. Sen, in 1989) from the University of North Carolina at Chapel Hill. In her early career, Susan worked at the Louisiana State University Medical School, Loyola University, the National Institute of Environmental Health Sciences, the University of North Carolina and Penn State. Working at the University of Michigan since 1998, she currently holds joint appointments as the H.E. Robbins Distinguished University Professor of Statistics, professor of psychiatry in the Institute of Medicine, and as research professor in the Institute for Social Research. Susan is a Fellow of IMS and ASA, an Elected Member of ISI and the US National Academy of Medicine, a Fellow of the College of Problems in Drug Dependence, and is a MacArthur Foundation Fellow for 2014–18. She was Co-editor of the *Annals of Statistics* (2007–2009), was a member of IMS Council (2013–16), and is President-Elect of the Bernoulli Society. She has delivered numerous keynote and plenary lectures, including last year's Wald Lectures at JSM in Seattle.

Marie Davidian, William Neal Reynolds Professor at North Carolina State University, says, "I first met Susan when we were both graduate students in the early 1980s at the University of North Carolina at Chapel Hill. Even then, it was clear that Susan possessed extraordinary mathematical talent. She relentlessly pursued collaborations with some of the foremost statistical scientists in the world, learning from them and expanding her knowledge and skills. The payoff was enormous. Working with Aad van der Vaart in The Netherlands, in the late 20th century Susan produced a breakthrough in statistical theory in a series of papers that are now considered fundamental."

Marie explains, "This work developed a rigorous theoretical framework for inference within the classes of nonparametric and semi-parametric models. Although foundational statistical theory for inference within the traditional class of parametric models, which are familiar but rather restrictive tools for the analysis of complex data, was well understood, for this more flexible class it was still in development. Susan's innovation in bringing the powerful mathematical theory of empirical processes to bear on this problem revolutionized our field; the approach pioneered by Susan is now a standard one that has been used by numerous researchers to justify and elucidate the properties of sophisticated new techniques demanded by increasingly complex data for which traditional methods are simply not appropriate."

Marie concludes, "Not only is [Susan] a brilliant mathematical statistician responsible for fundamental work in statistical theory that has revolutionized the field, she is a visionary leader in promoting and facilitating the application of her ground-breaking work in practice. The impact of her research in both realms has been profound."



Susan Murphy (right) is a keen ice hockey player

Data Wisdom for Data Science

Bin Yu, Departments of Statistics and EECS, University of California at Berkeley wrote this Invited note for http://odbms.org (The Resource Portal for Big Data, New Data Management Technologies and Data Science). We reprint it here with permission:

In the era of big data, much of the research in academia and development in industry is about how to store, communicate, and compute (via statistical methods and algorithms) on data in a scalable and efficient fashion. These areas are no doubt important. However, big (and small) data can only be turned into true knowledge and useful, actionable information if we value "data wisdom" just as much. In other words, with all the excitement over big data, it is necessary to recognize that the size of the data has to be adequate relative to the complexity of the problem in order to get a reliable answer out of big data. Data wisdom skills are crucial for us to extract useful and meaningful information from data, and to ensure that we do not misuse expanding data resources.

I admit that "data wisdom" is a re-branding of essential elements of the best of applied statistics as I know it. They are more eloquently expressed in the writings of great statisticians (or data scientists) such as John W. Tukey (http://projecteuclid.org/euclid.aoms/1177704711) and George Box (http://www.tandfonline.com/doi/abs/10.1080/01621459.1976.10480949#.VR2_eWYhByU).

Data wisdom is a necessary re-branding because it conveys these elements (to a first approximation), better than the term "applied statistics", to people outside the community. An informative name such as data wisdom is a good step towards recognizing the importance of the best of applied statistics skills in data science.

Revising the first sentence of Wikipedia's entry on "wisdom", I would like to say:

> *"Data wisdom is the ability to combine domain, mathematical, and methodological knowledge with experience, understanding, common sense, insight, and good judgment in order to think critically about data and to make decisions based on data."*

Data wisdom is a mix of mathematical, scientific, and humanistic abilities. It combines science with art. It is something that is best learned by working with someone who has it. It is very difficult to learn just by reading a book without guidance from experienced practitioners.

That said, there are questions that one can ask to help form or cultivate data wisdom. Here are ten basic sets of questions that I encourage everyone to ask, before embarking on, and during, any data analysis project. These questions are naturally sequential in the beginning, but their order does not have to be respected during the iterative process of data analysis. This list of questions is not meant to be exhaustive, but give the flavor of data wisdom.

1. Question

The beginning of a data science problem is always something outside of statistics or data science. For example, a question in neuroscience: how does the brain work? Or a question in banking: to which group of customers should a bank promote a new service?

Associated with such a question are domain experts that a statistician or a data scientist needs to interact with. These experts help provide a broader picture of the question, domain knowledge, prior work, and a reformulation of the question if necessary.

It takes strong interpersonal skills to establish relationships with (most likely very busy) domain experts. This interaction is crucial for the success of the data science project to come.

With the abundance of data, it often happens that questions are not precisely formulated before data collection. We find ourselves in the game of "exploratory data analysis" (EDA), as Tukey called it. We fish for questions to ask and enter the iterative process of statistical investigation (as Box discussed in the paper linked above). We have to be vigilant not to overfit or interpret patterns in data due to noise. For instance, overfitting can happen when the same data is used to formulate a question and again to validate the answer to that question. A good rule-of-thumb is to split the data, while respecting the underlying structures (e.g. dependence, clustering, heterogeneity) so both parts are representative of the original data. Use one part to fish for a question and the other part to find the answer via, for example, prediction or modeling.

2. Collection

What are the most relevant data to collect in order to answer the question in (1)?

Ideas from experimental design (a subfield of statistics) and active learning (a subfield of machine learning) are useful here. The above question is good to ask even if the data has already been collected because understanding the ideal data collection process might reveal shortcomings of the actual data collection process and shed light on analysis steps to follow.

It is useful to ask these questions: How were the data collected? At what locations? Over what time period? Who collected them? What instruments were used? Have the operators and instruments changed over the period?

Try to imagine yourself physically at the data collection site.

Continues on **page 9**

3. Meaning

What does a number mean in the data? What does it measure? Does it measure what it is supposed to measure? How could things go wrong? What statistical assumptions is one making by assuming things didn't go wrong? (Knowing the data collection process helps here.)

4. Relevance

Can the data collected answer the substantive question(s) in whole or in part? If not, what other data should one collect? The points made in (2) are pertinent here.

5. Translation

How should one translate the question in (1) into a statistical question regarding the data to best answer the original question? Are there multiple translations? For example, can we translate the question into a prediction problem or an inference problem regarding a statistical model? List the pros and cons of each translation relative to answering the substantive question before choosing a model.

6. Comparability

Are the data units comparable or normalized so that they can be treated as if they were exchangeable? Or are apples and oranges being combined? Are the data units independent? Are two columns of data duplicates of the same variable?

7. Visualization

Look at data (or subsets of them). Create plots of 1- and 2-dimensional data. Examine summaries of such data. What are the ranges? Do they make sense? Are there any missing values? Use color and dynamic plots. Is anything unexpected? It is worth noting that 30% of our cortex is devoted to vision, so visualization is highly effective to discover patterns and unusual things in data. Often, to bring out patterns in big data, visualization is most useful after some model building, for example, to obtain residuals to visualize.

8. Randomness

Statistical inference concepts such as p-values and confidence intervals rely on randomness. What does randomness mean in the data? Make the randomness in the statistical model as explicit as possible. What domain knowledge supports such a statistical or mathematical abstraction or the randomness in a statistical model?

One of the best examples of explicit randomness in statistical modeling is the random assignment mechanism in the Neyman–Rubin model for causal inference (also used in AB testing).

9. Stability

What off-the-shelf method will you use? Do different methods give the same qualitative conclusion? Perturb one's data, for example, by adding noise or subsampling if data units are exchangeable (in general, make sure the subsamples respect the underlying structures, e.g. dependence, clustering, heterogeneity, so the subsamples are representative of the original data). Do the conclusions still hold? Only trust those that pass the stability test, which is an easy-to-implement, first defense against over-fitting or too many false positive discoveries.

It is one form of reproducibility (for more information on the importance of stability, see my paper at http://projecteuclid.org/euclid.bj/1377612862).

Reproducibility has recently drawn much attention in the scientific community; see, for example, a special issue of Nature (http://www.nature.com/nature/focus/reproducibility/).

Marcia McNutt, the Editor-in-Chief of *Science*, pointed out that "reproducing an experiment is one important approach that scientists use to gain confidence in their conclusions." Similarly, business and government entities should require that the conclusions drawn from their data analyses be reproducible when tested with new and similar data.

10. Validation

How does one know one's data analysis job is well done? What is the performance metric? Consider validation with other kinds of data or prior knowledge. New data might need to be collected to validate.

►◄

There are many more questions to ask, but I hope the above list gives you a feel or a sense on what it takes to gain data wisdom. As a statistician or data scientist, the answers to these questions have to be found OUTSIDE statistics and data science. To find reliable answers, sources of useful information include the "dead" (e.g. scientific literature, written reports, books) and the "living" (e.g. people). Excellent interpersonal skills make the search much easier for the right sources to dig into, even if one is after a "dead" information source. The abundance and availability of information makes these people skills ever more important, since knowledgeable people almost always provide the best pointers, in my experience.

How do you think "data wisdom" should be cultivated? Leave a comment on the Bulletin website: http://bulletin.imstat.org

MSC2020: Revising the Mathematics Subject Classification

Edward Dunne, the executive editor of *Mathematical Reviews*, and Klaus Hulek, Editor-in-Chief of *zbMATH*, are seeking your input:

Mathematical Reviews (*MR*) and *zbMATH* cooperate in maintaining the Mathematics Subject Classification (MSC), which is used by these reviewing services, publishers, and others to categorize items in the mathematical sciences literature. The current version, MSC2010, consists of 63 areas classified with two digits refined into over 5000 three- and five-digit classifications. Details of MSC2010 can be found at www.msc2010.org or www.ams.org/msc/msc2010.html and zbmath.org/classification/.

MSC2010 was a revision of the year 2000 subject classification scheme developed through the collaborative efforts of the editors of *zbMATH* and *MR* with considerable input from the community. *MR* and *zbMATH* have initiated the process of revising MSC2010 with an expectation that the revision will be used beginning in 2020. From the perspective of *MR* and *zbMATH*, the five-digit classification scheme is an extremely important device that allows editors and reviewers to process the literature. Users of the publications of *zbMATH* and *MR* employ the MSC to search the literature by subject area. In the decade since the last revision, keyword searching has become increasingly prevalent, with remarkable improvements in searchable databases. Yet the classification scheme remains important. Many publishers use the subject classes at either the time of submission of an article, as an aid to the editors, or at the time of publication, as an aid to readers. The arXiv uses author-supplied MSC codes to classify submissions, and as an option in creating alerts for the daily listings. Browsing the *MR* or *zbMATH* database using a two- or three-digit classification search is an effective method of keeping up with research in specific areas.

Your input is requested

Based in part on some thoughtful suggestions from members of the community, the editors of MR and zbMATH have given preliminary consideration to the scope of the revision of the MSC.

We do not foresee any changes at the two-digit level; however, it is anticipated that there will be refinement of the three- and five-digit levels.

At this point, zbMATH and MR welcome additional community input into the process. Comments should be submitted through the Web by creating an account at msc2020.org. To contact the editors or if you cannot use the web interface, you may send email to feedback@msc2020.org.

All information about the MSC revision is jointly shared by *MR* and *zbMATH*. This input will be of great value as the process moves forward.

Existing subject classifications for probability and statistics (MSC2010)

60-XX Probability theory and stochastic processes

60-00	General reference (handbooks, dictionaries, bibliographies)
60-01	Instructional exposition (textbooks, tutorial papers, etc.)
60-02	Research exposition (monographs, survey articles)
60-03	Historical
60-04	Explicit machine computation and programs
60-06	Proceedings, conferences, collections, etc.
60-08	Computational methods
60Axx	Foundations of probability theory
60Bxx	Probability theory on algebraic and topological structures
60Cxx	Combinatorial probability
60Dxx	Geometric probability and stochastic geometry
60Exx	Distribution theory
60Fxx	Limit theorems
60Gxx	Stochastic processes
60Hxx	Stochastic analysis
60Jxx	Markov processes
60Kxx	Special processes

62-XX Statistics

62-00	General reference (handbooks, dictionaries, bibliographies)
62-01	Instructional exposition (textbooks, tutorial papers, etc.)
62-02	Research exposition (monographs, survey articles)
62-03	Historical
62-04	Explicit machine computation and programs (not the theory of computation or programming)
62-06	Proceedings, conferences, collections, etc.
62-07	Data analysis
62-09	Graphical methods
62Axx	Foundational and philosophical topics
62Bxx	Sufficiency and information
62Cxx	Decision theory
62Dxx	Sampling theory, sample surveys
62Exx	Distribution theory
62Fxx	Parametric inference
62Gxx	Nonparametric inference
62Hxx	Multivariate analysis
62Jxx	Linear inference, regression
62Kxx	Design of experiments
62Lxx	Sequential methods
62Mxx	Inference from stochastic processes
62Nxx	Survival analysis and censored data
62Pxx	Applications
62Qxx	Statistical tables

XL-Files: Peter Hall of Fame

Photo: Harvard University

Xiao-Li Meng writes:

For many statisticians, "Peter Hall" is a synonym for prolificacy. In his 40 years of professional career since his PhD in 1976, Peter had published over 600 papers, mostly in top journals. However, if Peter's legacy were remembered *only* by his scholarly accomplishments, we would be missing a once-in-a-(professional-)lifetime opportunity to inspire generations to come.

When we academics hear of a peer publishing far more than ourselves, a few internal dialogues inevitably take place, from the self-comforting, "Well, these papers can't be all that good," to the self-motivational, "Gosh, I need to work much harder!" Regardless of whether we are jealous, envious, or simply couldn't care less, the thought that "Hmmm, that author must be a very generous person" has, perhaps, never entered these internal dialogues. On the contrary, we might have local priors to support the stereotypes that someone who is insanely devoted to research is statistically more likely to be an over-bar eccentric or an under-bar citizen, or minimally someone who has no time for others even if she/he wants to.

Peter broke all these stereotypes. For anyone with a soupçon of skepticism, check out over 150 unsolicited testimonies and reflections at http://www.stat-center.pku.edu.cn/Peter_Gavin_Hall, a memorial site established right after Peter's passing in January at the prime age of 64. It is practically impossible to read all these stories without being moved, humbled and inspired. A most telling sign of Peter's quality as a human being is the word cloud (below right) summarizing these testimonies, where the largest two words are *kind* and *generous*.

Peter's generosity was of the most precious and noble kind: with his time and his ideas. I have direct data to testify to this fact as I had the honor to have him on the editorial board of *Statistica Sinica.* When I asked him I had my doubts, fueled by the stereotypes of busy scholars, whether he would even be willing to serve. But the reality is that not only did he say yes right away, he was the minimal order statistic in terms of time taken for handling submissions, just as he was the maximal order statistic in terms of research publications. As I report in the upcoming issue of *Annals of Statistics* published in Peter's honor, he responded to my first assignment to him, in less than 12 hours, with a detailed AE report filled with insightful ideas. Offering research ideas anonymously is not something that most of us would be willing to do, and indeed the academic world has no shortage of stories of nasty fights over scientific priorities.

In contrast, the stories told at Peter's memorial session at this year's JSM repeatedly confirmed how Peter had given the highest priorities to requests from reviewing grant proposals to writing promotion letters, and how he would have his ideas and derivations neatly laid out in a manuscript within a few days after an initial conversation with his collaborator(s). Although to my deep regret I never had an opportunity to be among Peter's 240 co-authors, these stories strongly suggest that the number of people with "Hall Number 1" would grow indefinitely had Peter been still with us.

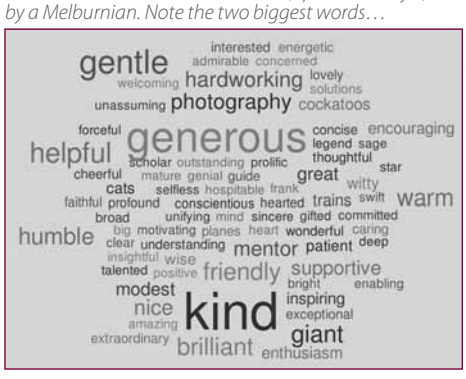
Peter was also deeply devoted to mentoring and helping future generations. This is well summarized by Rudy Beran and Nick Fisher in their obituary for Peter (*JRSSA*, 2016): "Peter regarded it as his responsibility to ensure that his graduate students and post-doctoral fellows had strong credentials for their first job, through having published a number of papers by the end of the study period. His periods of supervision were marked by remarkable pastoral care—ensuring introductions to other researchers, inclusion in social events and genuine concern for personal wellbeing." They also wrote about how Peter generously supported many international visitors to his group, from payment arrangements to social programs, and, of course, to idea-sharing opportunities.

Many of us miss Peter deeply and will continue to do so for a long time to come. Aurore Delaigle and Ray Carroll, in their obituary for Peter (*IMS Bulletin*, 2016), put the reasons beautifully: "Peter was someone really special. He was an extraordinary, kind, gentle and generous person, of the type most people do not even have the chance to meet once in their lifetime. ... His absence will leave a huge hole in the hearts of many people all over the world."

Peter was a formidable scholar, but a gentle soul. Our (academic) world surely will benefit from having many more of such people. So let us establish a Peter Hall of Fame to honor those who have a beautiful mind for research and a beautiful heart for helping others, especially the younger generations.

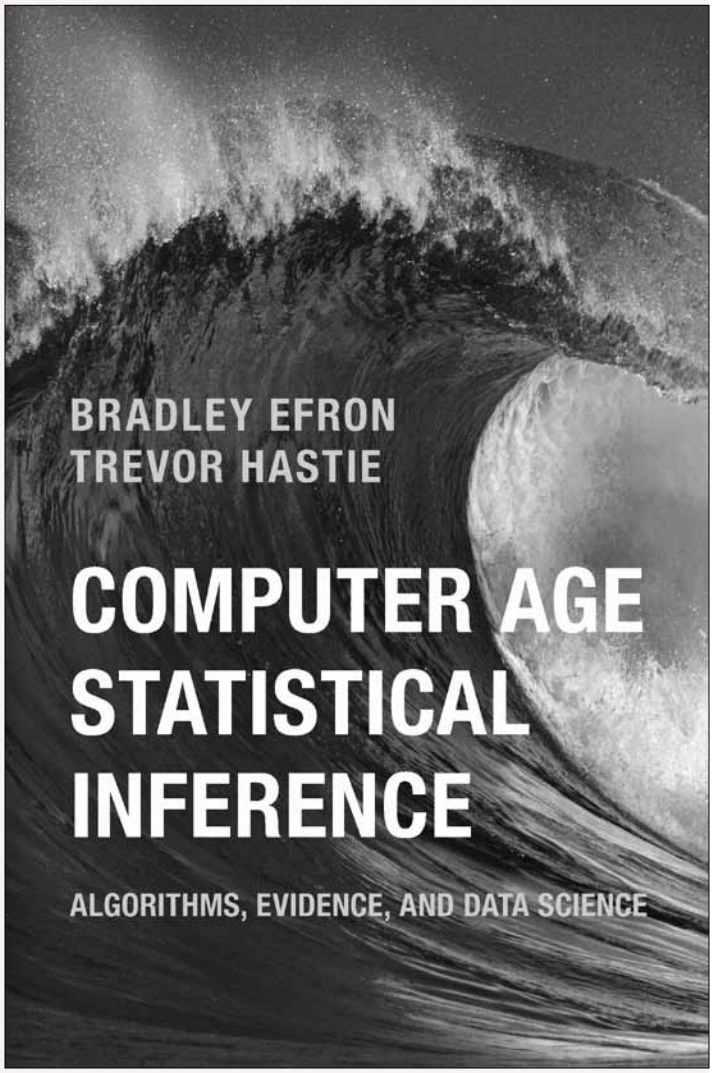
Who would you nominate for inclusion in a Peter Hall of Fame?

Word cloud of tributes to Peter Hall (up to February 8) by a Melburnian. Note the two biggest words…



IMS Monographs book by Bradley Efron and Trevor Hastie

This is the latest in the popular *IMS Monographs* series, published in a cooperative arrangement with Cambridge University Press. *Computer Age Statistical Inference: Algorithms, Evidence, and Data Science* is written by Bradley Efron and Trevor Hastie, both from Stanford University. Published in the UK in July and the USA in September, you can get your copy (with your **40% IMS member's discount**) from www.cambridge.org/ims



The 21st century has seen a breathtaking expansion of statistical methodology, both in scope and influence. "Big data," "data science," and "machine learning" have become familiar terms in the news, as statistical methods are brought to bear upon the enormous data sets of modern science and commerce. How did we get here? And where are we going?

This book takes us on an exhilarating journey through the revolution in data analysis following the introduction of electronic computation in the 1950s. Beginning with classical inferential theories—Bayesian, frequentist, Fisherian—individual chapters take up a series of influential topics: survival analysis, logistic regression, empirical Bayes, the jackknife and bootstrap, random forests, neural networks, Markov Chain Monte Carlo, inference after model selection, and dozens more. The distinctly modern approach integrates methodology and algorithms with statistical inference. The book ends with speculation on the future direction of statistics and data science.

Hardback ISBN 9781107149892: US$74.99 **IMS members $44.99**

"How and why is computational statistics taking over the world? In this serious work of synthesis that is also fun to read, Efron and Hastie, two pioneers in the integration of parametric and nonparametric statistical ideas, give their take on the unreasonable effectiveness of statistics and machine learning in the context of a series of clear, historically informed examples."
— Andrew Gelman, Columbia University

"A masterful guide to how the inferential bases of classical statistics can provide a principled disciplinary frame for the data science of the twenty-first century."
— Stephen Stigler, University of Chicago

"This is a guided tour of modern statistics that emphasizes the conceptual and computational advances of the last century. Authored by two masters of the field, it offers just the right mix of mathematical analysis and insightful commentary."
— Hal Varian, Google

"Efron and Hastie... have managed brilliantly to weave the fiber of 250 years of statistical inference into the more recent historical mechanization of computing. This book provides the reader with a mid-level overview of the last 60-some years by detailing the nuances of a statistical community that, historically, has been self-segregated into camps of Bayes, frequentist and Fisher, yet in more recent years, has been unified by advances in computing."
— Rebecca Doerge, Carnegie Mellon University

Women in Probability

Are you a woman working in probability and related fields? Tai Melcher, one of the organizers of the Women in Probability group, writes:

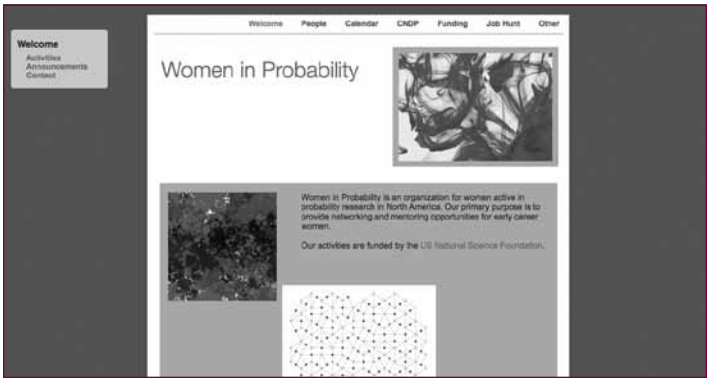
Women in Probability is an organization for women engaged in research in probability theory and related fields. Our primary purpose is to provide networking and mentoring opportunities for early-career women, as well as to improve the visibility of women's research in the field.

Since our inception in Fall 2013, Women in Probability has organized various activities to help early-career women develop interpersonal contacts, with the goal of facilitating their early career transitions and ultimately improving the retention of talented women researchers. These activities include regular networking events at national probability conferences, as well as an **Early Career Peer Group** (ECPG).

The networking events (often a dinner or other meal) are organized around existing conferences, and bring together women at all career stages for informal conversations on both professional and personal topics. These events give early-career attendees an opportunity to interact with their more established colleagues in a more direct way than the usual conference atmosphere allows.

The ECPG is typically for women holding postdoctoral research positions or recently appointed to tenure-track positions. The group meets about once a month during the academic year for online seminars. The seminars feature short research talks by a group member, followed by discussions of professional development topics relevant to early-career researchers intending to continue in academia. The talks are an opportunity for the speaker to begin putting her work in the context of the existing literature and defining herself as an independent researcher, for example, for those in postdoctoral positions, preparing for the job talk. These topics are suggested by group members in advance of the meeting, and in previous years have included questions like how to choose research topics, how to select journals to publish in, how to develop collaborations, etc., as well as some questions more focused on issues related to women in academia.

With these activities, we seek to establish another community within the broader probability community, in addition to the standard collaboration and research network many researchers naturally develop. This community provides yet another resource for the input, feedback, and other general support that all early-career researchers need to be successful. Interactions through the networking events and ECPG naturally foster relationships among contemporary women who will be colleagues throughout their academic careers, cultivating an improved sense of belonging which we think will encourage women to persevere through the sometimes trying early career stages.



Also important to the success of women in research is the recognition of their contributions to the field. On our webpage, our organization maintains a current **list of women active in probability and probability-related research**; this list serves in part as a **resource for conference and seminar organizers looking for speakers**. This past May, Women in Probability also hosted the first meeting of its own series **Conference on New Developments in Probability** (CNDP). This series is devoted to current topics in probability theory; the first meeting was co-organized with the Emphasis Year in Probability at Northwestern University and was supported by NSF and Northwestern University.

CNDP is a continuation of, but variation on, the Workshop for Women in Probability series which ran for three meetings in 1994, 2008, and 2012. The 2016 CNDP featured plenary talks by Nayantara Bhatnagar (University of Delaware), Rodrigo Banuelos (Purdue University), Sandra Cerrai (University of Maryland, College Park), Ioana Dumitriu (University of Washington), Rick Durrett (Duke University), Vadim Gorin (Massachusetts Institute of Technology), Davar Khoshnevisan (University of Utah), Lea Popovic (Concordia University), Gigliola Staffilani (Massachusetts Institute of Technology), Elisabeth Werner (Case Western Reserve University), and Arnab Sen (University of Minnesota). The conference also included a mini-celebration of Alexandra Bellow's 80th birthday; Bellow gave a short talk after an introduction by long-time colleague Roger Jones. We hope to host this conference every three to four years in changing locations.

For anyone interested in Women in Probability or our activities, please see our website http://womeninprobability.org.

Recent papers: two IMS journals

Annals of Probability Volume 44, number 4: July 2016

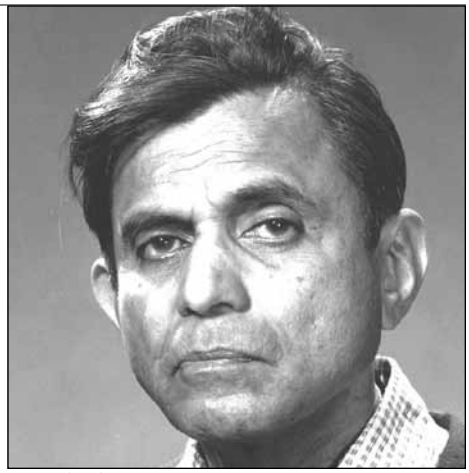
Access papers at http://projecteuclid.org/aop

Annals of Applied Probability Volume 26, no 3: June 2016

Access papers at http://projecteuclid.org/aoap

Obituary: Vidyadhar P. Godambe

1926–2016



V.P. Godambe

Vidyadhar P. Godambe, who died June 9, 2016, is recognized as a pioneer in the foundations of inference in survey sampling. He is also known for formulating and developing a theory of estimating equations. His research contributions, and the fervour with which he pursued the answers to fundamental questions, attracted many other researchers and students to work in the foundations of inference.

Godambe was born June 1, 1926 in Pune, in the state of Maharashtra in India. He was the second born and the only son in a family of four children. He was educated at the Nutan Marathi Vidyalaya, a leading school in Pune, and at Fergusson College for his BSc in mathematics. He was awarded an MSc degree from Bombay University in 1950, and the PhD in 1958 from the University of London. Following a year as Senior Research Fellow at the Indian Statistical Institute in Calcutta, he became Professor and Head of the Statistics Department at Science College in Nagpur, and later held the same post at the Institute of Science, Bombay. In 1964, he left India for North America, his first position being at the Dominion Bureau of Statistics, now Statistics Canada. After visiting appointments at Johns Hopkins University and the University of Michigan, he joined the University of Waterloo in 1967. He remained in Waterloo thereafter, although he also spent the winter months in India in later years, and kept in touch with colleagues at the University of Pune. An interview appears in Volume 17, Issue 4 (2002) of *Statistical Science,* 458-466.

While employed as a government statistician before undertaking his PhD, Godambe published the path-breaking paper, "A unified theory of sampling from finite populations", in the *Journal of the Royal Statistical Society* in 1955. This paper provided a theoretical framework for the problem of estimating a survey population total from a probability sample. The new framework led to the surprising result that in terms of standard optimality criteria, there was no best unbiased linear estimator, if the coefficients were allowed to depend on the sampled unit labels. Thus the need for new ways of evaluating sampling strategies was established, and opened the way to much further work.

The late 1950s and early 1960s were a time of re-examination of the foundations of inference in terms of "principles", by leading statisticians such as G. A. Barnard, A. Birnbaum, D. R. Cox, D. A. S. Fraser and D. A. Sprott. Godambe realized that his formulation of the survey estimation problem highlighted an apparent contradiction: the likelihood and conditionality principles appeared to be in conflict with "design-based estimation", or estimation based on the randomization in the sampling design. Beginning with a 1966 paper, "A new approach to sampling from finite populations", he wrote several papers on the riddle of the role of randomized sampling in survey inference, particularly in the presence of a statistical model for the survey responses. A 1982 paper in the *Journal of the American Statistical Association* proposed a resolution of the problem, relating the robustness of design-based inference to the treatment of nuisance parameters in traditional statistical theory. However, in the same year and journal, he published the collection of examples known as "Godambe's paradox", revealing that the tension between the principles of inference and the role of randomization persists beyond survey inference, to the foundations of statistics.

In the same period he was also contributing to estimation theory. In 1960 in the *Annals of Statistics* he published the note, "An optimum property of regular maximum likelihood estimation", defining the notion of an unbiased estimating equation, and introducing an optimality criterion for estimating functions under which the maximum likelihood estimating function (and equation) were optimal. Godambe's focus on the estimating function rather than the estimator allowed him from his perspective to assert optimality without reference to asymptotics. In subsequent work he and others developed estimating function methodology into an established framework for estimation with many applications.

Godambe was a Fellow of the Institute of Mathematical Statistics, a Fellow of the American Statistical Association, and an Honorary Member of both the Statistical Society of Canada and the International Indian Statistical Association. He was a Platinum Jubilee Lecturer of the 1990 Indian Science Congress, and in 1987 was awarded the Gold Medal of the Statistical Society of Canada. In 2002 he became a Fellow of the Royal Society of Canada.

Written by Mary Thompson, University of Waterloo. ***Acknowledgments:*** *An obituary on which this one is based was first requested by the Royal Statistical Society some years ago. A version also appears in the August 2016 issue of* Liaison*, the Statistical Society of Canada newsletter. Some portions are adapted from an Appendix (by M. Thompson) to the 2006 biography,* Philosopher–Statistician: Vidyadhar Godambe*, by Chintamani Deshmukh.*

Obituary: Paul Joyce

1958–2016

Paul Joyce. Photo courtesy of University of Idaho.

It is with great sorrow that we share news of the death of Dr. Paul Joyce. Paul passed away in a car accident on April 22, 2016. He has been a friend, a colleague and a mentor to many at the University of Idaho and in the broader scientific community.

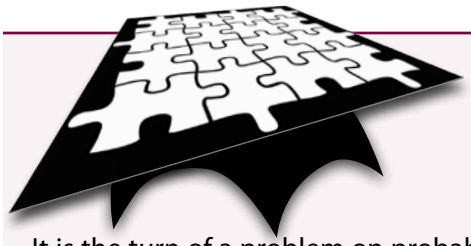
Paul toiled happily in probability theory and mathematical statistics, and was especially known for his work in population genetics, phylogenetics, and modeling experimental evolution. He delighted in seeing friends and colleagues at conferences and other venues, and always had plenty of funny stories to share. He loved politics, history, poker, and telling math jokes. He couldn't spell—once repeatedly using in a grant proposal an alternative spelling of the word "assess." The bonds he had with his wife and son were deep and lively, and they were often part of the stories he would tell. They, of course, also had plenty of funny stories to tell of Paul, often involving one of his frequent excursions into "math mode."

Paul Joyce held both BS and MS degrees in Mathematics from Montana State University, and a PhD, also in Mathematics, from the University of Utah. He joined the faculty of the University of Idaho in 1991 and was appointed as the dean of the college of Science in 2013. During his tenure at the University of Idaho he also served as the director of the Bioinformatics and Computational Biology Program and as chair of the Faculty Senate.

Paul received multiple honors from the University of Idaho, including three Alumni Awards for Academic Excellence, the College of Science Distinguished Faculty Award, a Graduate Faculty Mentoring Award, and the University Distinguished Professor Award.

Paul is survived by his wife Jana and their son Andrew. Mathematics, Statistics, Computational Biology and the whole scientific community has lost a leader who put the wellbeing of others ahead of his own, mentored many, and contributed much to science and the University community.

Written by Steve Krone, University of Idaho, and Zaid Abdo, Colorado State University



Student Puzzle Corner 15

It is the turn of a problem on probability this time. We will consider a problem that looks like a problem on analysis. Many of you know that analysis and probability share a strong synergistic relationship; there are a number of classic texts on how analysis and probability feed into each other. The problem will be left slightly open ended to whet your imagination. Here is the exact problem of this issue:

(a) Let f be a given function on the unit interval [0, 1]. Define now a sequence of functions f_n by the rule $f_n(x)$ = The average value of f over the interval $[\frac{k}{2^n}, \frac{k+1}{2^n}]$, if $x \in [\frac{k}{2^n}, \frac{k+1}{2^n}]$. What is the weakest sufficient condition you can provide under which $f_n(x) \to f(x)$ for almost all x? Give a proof of your claim.

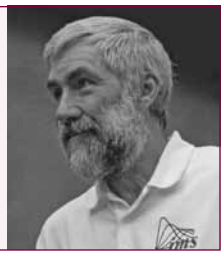
(b) For extra credit only: Fix an $\epsilon > 0$. Is it true that for some set B with $\int_B dx < \epsilon$, $\sup_{x \notin B} |f_n(x) - f(x)| \to 0$? That is, is it true that in fact outside of a set of arbitrarily small measure, f_n will converge uniformly to f?

Deadline extended to September 8

Student members of the IMS are invited to submit solutions (to bulletin@imstat.org with subject "Student Puzzle Corner"). The new deadline is **September 8, 2016**. The names and affiliations of student members who submit correct solutions, and the answer to the problem, will be published in the next issue of the Bulletin. The Editor's decision is final.

Terence's Stuff: Principles

Terry Speed is taking a stand on principles. There's a danger, as Oscar Wilde said, that if you lean on them too hard, "one day they'll end up giving way."



Not long ago I helped some people with the statistical analysis of their data. The approach I suggested worked reasonably well, somewhat better than the previously published approaches for dealing with that kind of data, and they were happy. But when they came to write it up, they wanted to describe our approach as *principled*, and I strongly objected. Why? Who doesn't like to be seen as principled?

I have several reasons for disliking this adjective, and not wanting to see it used to describe anything I do. My principal reason for feeling this way is that such statements carry the implication, typically implicit, but at times explicit, that any other approach to the task is *unprincipled.* I've had to grin and bear this slur on my integrity many times in the writings of Bayesians. Not atypical is the following statement about probability theory in an article about Bayesian inference: that it "furnishes us with a principled and consistent framework for meaningful reasoning in the presence of uncertainty." Not a Bayesian? Then your reasoning is likely to be unprincipled, inconsistent, and meaningless. Calling something one does "principled" makes me think of Hamlet's mother Queen Gertrude's comment, "The lady doth protest too much, methinks."

If a statistical analysis is clearly shown to be effective at answering the questions of interest, it gains nothing from being described as principled. And if it hasn't been shown so, fine words are a poor substitute. In the write-up mentioned at the beginning of this piece, we compared different analyses, and so had no need to tell the reader that we were principled: our approach was shown to be effective.

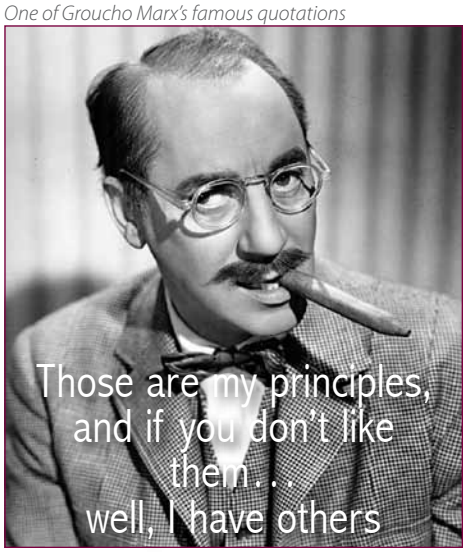
Of course there is the possibility that multiple approaches to the same problem are principled, and they just adhere to different principles. Indeed, one of the ironies in the fact that my collaborators want to describe our approach to the analysis of their data as principled, is that a Bayesian approach is one of the alternatives. And as we have seen, all Bayesian analyses are principled. The reason my collaborators wanted to describe what we did as principled, was to distinguish our approach from the non-statistical alternatives. To them, all statistical methods are principled. Groucho Marx said: "Those are my principles, and if you don't like them... well, I have others."

I have another reason for feeling ambivalent about principles in statistics. Many years ago, people spent time debating philosophies of statistical inference; some still do. I got absorbed in it for a period in the 1970s. At that time, there was much discussion about the Sufficiency Principle and the Conditionality Principle (each coming in strong and weak versions), the Ancillarity Principle, not to mention the Weak Repeated Sampling Principle, the Invariance (Equivariance) Principle, and others, and the famous Likelihood Principle. There were examples, counter-examples, and theorems of the form "Principle A & Principle B implies Principle C".

You might think that with so many principles of statistical inference, we'd always know what to do with the next set of data that walks in the door. But this is not so. The principles just mentioned all take as their starting point a statistical model, sometimes from a very restricted class of parametric models. Principles telling you how to get from the data and questions of interest to that point were prominent by their absence, and still are. Probability theory is little help to Bayesians when it comes to deciding on an initial probability model. Perhaps this is reasonable, as there is a difference between the philosophy of statistical inference and the art of making statistical inferences in a given context. We have lots of principles to guide us for dealing with the easy part of our analysis, but none for the hard part.

While the younger me spent time on all those Principles over 40 years ago, I wouldn't teach them today, or even recommend the discussions as worth reading. But I do think there is a demand for the principles of what I'll call initial data analysis, an encapsulation of the knowledge and experience of statisticians in dealing with the early part of an analysis, before we fix on a model or class of models. I am often asked by non-statisticians engaged in data science how they can learn applied statistics, and I don't have a long list of places to send them. Whether what they need can be expressed in principles is not clear, but I think it's worth trying. My first step in this direction was taken 16 years ago, when I posted two "Hints & Prejudices" on our microarray analysis web site, namely "Always log" and "Avoid assuming normality". I am not against principles, but I like to remember Oscar Wilde's aphorism: *"Lean on principles, one day they'll end up giving way."*

One of Groucho Marx's famous quotations



IMS meetings around the world

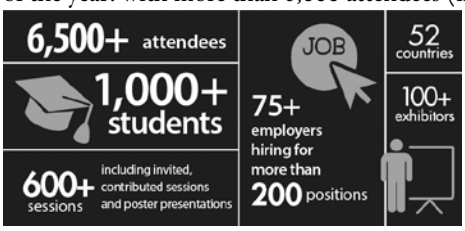
Joint Statistical Meetings: 2017–2022

IMS sponsored meeting NEW

IMS Annual Meeting @ JSM 2017:
July 29–August 3, 2017
Baltimore, MD

w https://www.amstat.org/meetings/jsm/2017/index.cfm

Join us in Baltimore, Maryland, for one of the biggest statistical events of the year: with more than 6,000 attendees (including over 1,000 students) from 52 countries, and over 600 sessions, it's a busy few days! The theme is *"Statistics: It's Essential."*



IMS sponsored meetings: JSM dates for 2018–2022

JSM 2018
July 28–August 2, 2018
Vancouver, Canada

IMS Annual Meeting @ JSM 2019
July 27–August 1, 2019, Denver, CO

JSM 2020
August 1–6, 2020
Philadelphia, PA

IMS Annual Meeting @ JSM 2021
August 7–12, 2021, Seattle, WA

2022 Joint Statistical Meetings
August 6–11, 2022
Washington, D.C.

IMS co-sponsored meeting NEW

Bernoulli/IMS 10th World Congress
August 17–21, 2020
Seoul, South Korea

w TBC

The next World Congress in Probability and Statistics will be in Seoul, South Korea, in August 2020.

IMS co-sponsored meeting UPDATED

The 10th ICSA International Conference
December 19–22, 2016
Shanghai Jiao Tong University, China

w http://www.math.sjtu.edu.cn/conference/2016icsa/

The tenth ICSA international conference will be held at Xuhui campus of Shanghai Jiao Tong University in China, from December 19–22, 2016. The theme is Global Growth of Modern Statistics in the 21st Century. The plenary speakers are: Jim Berger, Tony Cai, Kai-Tai Fang, Zhiming Ma, Marc A. Suchard, Lee-Jen Wei and C.F. Jeff Wu.

IMS co-sponsored meeting NEW

6th Workshop on Stochastic Methods in Game Theory
May 5–13, 2017
Erice, Sicily, Italy

IMS Representative(s) on Program Committees: Marco Scarsini

w https://sites.google.com/site/ericegametheory2017

The 6th Workshop on Stochastic Methods in Game Theory (May 5–13, 2017) will be held in beautiful Erice, Sicily. Many decision problems involve elements of uncertainty and of strategy. Most often the two elements cannot be easily disentangled. The aim of this workshop is to examine several aspects of the interaction between strategy and stochastics. Various game theoretic models will be presented, where stochastic elements are particularly relevant either in the formulation of the model itself or in the computation of its solutions.

IMS sponsored meeting NEW

WNAR/IMS Meeting
June 24–28, 2017
Santa Fe, NM, USA

The WNAR/IMS 2017 Meeting will be in Santa Fe, New Mexico, at the Eldorado Hotel & Spa. The dates are June 24–28, 2017. Details to follow.

At a glance:

forthcoming IMS Annual Meeting and JSM dates

2017

IMS Annual Meeting @ JSM: Baltimore, MD, **July 29 – August 3, 2017**

2018

IMS Annual Meeting: Vilnius, Lithuania, **July 2–6, 2018**

JSM: Vancouver, Canada, **July 28–August 2, 2018**

2019

IMS Annual Meeting @ JSM: Denver, CO, **July 27–August 1, 2019**

2020

IMS Annual Meeting/ 10th World Congress: Seoul, South Korea, **August 17–21, 2020**

JSM: Philadelphia, **August 1–6, 2020**

2021

IMS Annual Meeting @ JSM: Seattle, WA, **August 7–12, 2021**

More IMS meetings around the world

IMS co-sponsored meeting

UPDATED

Peter Hall Memorial Conference
September 30–October 1, 2016
Conference Center, University of California, Davis

w http://www.stat.ucdavis.edu/hallmemorialconference/

Please join the UC Davis Department of Statistics for the Peter Hall Memorial Conference in honor of Distinguished Professor Peter Hall who sadly passed away in January 2016.

The confirmed speakers so far for the Peter Hall Memorial Conference are:

- Jeannie Hall, Melbourne, Australia: *Memorial Session*
- Rudy Beran, UC Davis: *"On double bootstrap asymptotics"*
- Peter Bickel, UC Berkeley: *"The bootstrap in some novel environments"*
- Tony Cai, University of Pennsylvania: *"Adaptive estimation of a planar convex set"*
- Song Xi Chen, Iowa State University: *"Two-sample tests for high dimensional means with thresholding and data transformation"*
- Ming-Yen Cheng, National Taiwan University: *"A simple and adaptive two-sample test in high dimensions"*
- Aurore Delaigle, University of Melbourne: *"Peter Hall and his contributions to deconvolution"*
- Jianqing Fan, Princeton University: *"Guarding against spurious discoveries in high dimension"*
- Frédéric Ferraty, University of Toulouse: *"Variable selection in high-dimensional nonparametric regression setting "*
- Jiashun Jin, Carnegie Mellon University: *"Innovated higher criticism and statisticians' networks"*
- Iain Johnstone, Stanford University: *"Eigenvalue distributions of variance components estimators in high-dimensional random effects models"*
- Runze Li, Pennsylvania State University: *"Projection test for high-dimensional mean vectors with optimal direction"*
- Steve Marron, University of North Carolina: *"High dimension low sample size asymptotics"*
- Byeong Park, Seoul National University: *"Smooth backfitting in errors-in-variables additive models"*
- Terry Speed, Melbourne and UC Berkeley: *"Some vignettes"*
- Matt Wand, University of Technology, Sydney: *"Fast approximate inference for arbitrarily large statistical models via message passing "*
- Alan Welsh, Australian National University: *"Early work on order statistics; research and teaching"*
- Fang Yao, University of Toronto: *"Mixture models and densities for functional data"*

The full schedule of events and speaker abstracts will be posted soon. Registration is open until **September 22, 2016**: http://www.stat.ucdavis.edu/hallmemorialconference/register.php

If you would like to give a short contributed talk please complete the form on the website. Space for contributed talks is limited and so you may be asked to provide a poster instead. Talks could be as short as five minutes depending on the number of contributors.

IMS co-sponsored meeting

Random processes and time series: theory and applications (A conference in honor of Murray Rosenblatt)
October 21–23, 2016
La Jolla, California, USA

w http://www.math.ucsd.edu/~rosenblattconf/

This conference will feature research on the topic of random processes and time series, both theory and applications. The conference celebrates the research of IMS Fellow Murray Rosenblatt. Further information about Professor Murray Rosenblatt is at http://math.ucsd.edu/~williams/mrosenb.html

The conference will launch the Murray and Adylin Rosenblatt Endowed Lecture Series in Applied Mathematics. The two inaugural lecturers are Cathy Constable, Scripps Institution of Oceanography, UC San Diego, and Robert Engle, New York University.

The conference will also feature the following plenary speakers: Richard Bradley, Indiana University; David Brillinger, UC Berkeley; Richard Davis, Columbia University; Larry Goldstein, USC; Keh-Shin Lii, UC Riverside; Magda Peligrad, University of Cincinnati; Dimitris Politis, UC San Diego; Philip Stark, UC Berkeley; Murad Taqqu, Boston University; and Wei Biao Wu, University of Chicago.

Registration—free but required—is open to researchers who have a research interest in the topic of random processes and time series and are affiliated with Universities or industrial or government research institutions. This includes current postdocs and PhD students.

More IMS meetings around the world

IMS sponsored meeting

Joint 2018 IMS Annual Meeting and 12th International Vilnius Conference on Probability Theory & Mathematical Statistics
July 2–6, 2018
Vilnius, Lithuania
w TBC

We are please to announce that the 2018 IMS Annual Meeting will be held in beautiful Vilnius, the capital of Lithuania, in conjunction with the 12th Vilnius Conference on Probability Theory and Mathematical Statistics. The Program Co-chairs are Peter Bühlmann (IMS) and Vygantas Paulauskas (Vilnius). The Local Chair is Remigijus Leipus. Details to follow, but mark your calendars!

IMS co-sponsored meeting

2017 IMS-China International Conference on Statistics and Probability
June 28–July 1, 2017
Nanning, Guangxi Province, China
w TBC

Local organizing committee chair: Zijia Peng, Guangxi University for Nationalities, China **e** pengzijia@126.com. Scientific program committee chair: Ming Yuan, University of Wisconsin–Madison, USA **e** myuan@stat.wisc.edu. The website is under construction.

IMS co-sponsored meeting

Nonparametric Statistics Workshop: "Integration of Theory, Methods and Applications"
October 6–7, 2016
University of Michigan, Ann Arbor
w http://sites.lsa.umich.edu/npworkshop2016/

IMS co-sponsored meeting

39th Conference on Stochastic Processes and their Applications (SPA)
July 24–28, 2017
Moscow, Russia
w TBC

IMS co-sponsored meeting

40th Conference on Stochastic Processes and Their Applications (SPA)
June 11–15, 2018
Chalmers University of Technology, Gothenburg, Sweden
w TBC

IMS co-sponsored meeting

Reproducibility of Research: Issues and Proposed Remedies
March 8–10, 2017, Washington DC, USA
w http://www.nasonline.org/programs/sackler-colloquia/upcoming-colloquia/

This meeting is one of the Arthur M. Sackler Colloquia, which address scientific topics of broad and current interest that cut across the boundaries of traditional disciplines.

ENAR 2017–2019 dates

IMS sponsored meetings

March 12–15, 2017: in Washington DC
March 25–28, 2018: in Atlanta, GA
March 24–27, 2019: in Philadelphia, PA
w http://www.enar.org/meetings/future.cfm

Other meetings and events around the world

ACEMS Workshop in Honour of Peter Gavin Hall NEW
December 10–12, 2016
Parkville, Victoria, Australia
w http://acems.org.au/news-events/events/acems-workshop-in-honour-of-peter-gavin-hall/

This workshop will gather friends and colleagues of Peter to celebrate this exceptional man and his unique contributions to statistics.

16th Winter School on Mathematical Finance NEW
January 23–25, 2017
Lunteren, The Netherlands
w https://staff.fnwi.uva.nl/p.j.c.spreij/winterschool/winterschool.html
Contact: Peter Spreij spreij@uva.nl

This is the 16th winter school on mathematical finance, with mini-courses by Damir Filipovic and Jan Kallsen, special invited lectures by Erhan Bayraktar, Thorsten Schmidt and Wim Schoutens.

Other meetings and events around the world

2016 ASA Biopharmaceutical Section
Regulatory–Industry Statistics Workshop
September 28–30, 2016
Marriott Wardman Park, Washington D.C.
w http://www.amstat.org/meetings/biopharmworkshop/2016/

Bangkok Workshop on Discrete Geometry and Statistics NEW
January 30–February 3, 2017
Bangkok, Thailand
w http://thaihep.phys.sc.chula.ac.th/BKK2017DSCR/
The workshop will focus on mathematical statistical physics of discrete systems, and in particular its applications to random geometries, as well as a few other related research directions. Real-life motivations for such studies range from attempts to quantize gravity to problems in condensed matter physics to mathematical modelling of cooperative phenomena in macroscopic communities.

A celebration in honor of Steve Fienberg NEW
October 15, 2016
Pittsburgh, PA, USA
w http://www.stat.cmu.edu/fienberg2016
The Department of Statistics at Carnegie Mellon University would like to celebrate Steve Fienberg, Professor Emeritus. It will include the inaugural Fienberg lecture.

The 6th International Workshop on Climate Informatics NEW
September 22–23, 2016 (Hackathon September 21, 2016)
NCAR Mesa lab in Boulder, Colorado
w https://www2.cisl.ucar.edu/events/workshops/climate-informatics/2016/home
Keynote speakers including: Sudipto Banerjee, Yulia Gel, Doug Nychka, Pradeep Ravikumar, Jason Smerdon. Climate informatics broadly refers to any research combining climate science with approaches from statistics, machine learning and data mining. The Climate Informatics workshop series, now in its sixth year, seeks to bring together researchers from all of these areas. We aim to stimulate the discussion of new ideas, foster new collaborations, grow the climate informatics community, and thus accelerate discovery across disciplinary boundaries. The format seeks to overcome cross disciplinary language barriers and to emphasize communication between participants by featuring tutorials, invited talks, panel discussions, posters and breakout sessions. Travel Fellowships available. Hackathon: We will have a data science "hackathon" to solve a challenging problem in climate informatics.

Statistical Challenges in Single-Cell Biology NEW
April 30–May 5, 2017
Monte Verità, Ascona, Switzerland
w https://www.bsse.ethz.ch/cbg/cbg-news/ascona-2017.html
The purpose of the workshop is to bring together participants from statistics, computational sciences, bioinformatics and biology, and to encourage interaction in a informal and collegial atmosphere. We welcome your submissions for proposals for contributed presentations. Application to the workshop opens October 2016.

14th International Conference on NEW
Statistical and Allied Sciences (ICCS-14)
December 12–15, 2016
Multan, Pakistan
For more information please contact Prof. Dr. Muhammad Aslam Adeeb, Conference Coordinator **e** aslamadib@yahoo.com or Mr. Ali Asad, Conference Secretary **e** aliasadncba@gmail.com

Young European Statistician (YES VIII)
January 23–25, 2017
Eindhoven, The Netherlands
w http://www.eurandom.nl/events/workshops/2017/YES_VIII/
This year the workshop aims to bring together young researchers (PhD students, postdocs and young faculty members) working (or interested) in the field of uncertainty quantification (both theoretical and applied aspects). Tutorials will be given by world experts David Blei, Richard Nickl, Aad van der Vaart and Cun-Hui Zhang. Young researchers will also be given the opportunity to present their work in the format of contributed talks or posters.

33rd International Workshop on Statistical Modelling NEW
July 16–20, 2018, Bristol, UK
w http://www.statmod.org/workshops.htm
The spirit of the workshop has always been to focus on problems motivated by real life data and on solutions that make novel contributions to the subject. We foster exchange of ideas and discussions among participants by avoiding parallel sessions.

2016 ASA Biopharmaceutical Section NEW
Regulatory–Industry Statistics Workshop
September 28–30, 2016, Washington DC, USA
w http://ww2.amstat.org/meetings/biopharmworkshop/2016/
With short courses, roundtable discussions and high-quality sessions, no statistician in the biopharmaceutical arena should miss this.

Employment Opportunities around the world

Australia: Melbourne, Victoria

University of Melbourne: Tutor (Statistics)
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29609573

Australia: Melbourne, Victoria

University of Melbourne: Lecturer / Senior Lecturer in Statistics (three positions)
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29685436

Australia: Melbourne, Victoria

University of Melbourne: Lecturer / Senior Lecturer in Statistics (two positions)
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29684605

Australia: Melbourne, Victoria

University of Melbourne: Professor in Statistics (Data Science)
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29838260

Australia: Melbourne, Victoria

University of Melbourne: Peter Hall Chair in Mathematical Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29838106

Canada: Sherbrooke, Quebec

Université de Sherbrooke: Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29802924

Germany: Magdeburg, Sachsen-Anhalt

Otto-von-Guericke University Magdeburg, Germany:
Professorship (W2 comparable to Associate) for Mathematical Stochastics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29604913

Israel: Jerusalem

Department of Statistics, Hebrew University:
Tenure-Track Faculty Position
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29992814

United Kingdom: Glasgow

University of Glasgow: Lecturer in Statistics, two positions
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29897979

United States: Davis, CA

University of California, Department of Statistics:
Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=30121134

Faculty Position in Statistics
at the Ecole polytechnique fédérale de Lausanne (EPFL)

The School of Basic Sciences at EPFL invites applications for a **tenure-track assistant professor in statistics**. We seek candidates in all areas of modern statistical methodology, theory, and computation and their interface with the emerging theme of data science.

The position will be part of the Institute of Mathematics, and is associated with EPFL's new initiative in data science. Depending on the research interests of the successful candidate, there will be opportunities for integration within EPFL's Data Science Centre. Joint appointments with an allied field, such as computer and communications sciences, are also a possibility.

We seek candidates with an outstanding research record and the capacity to direct high quality research. We also expect a strong commitment to excellence in teaching at all levels.

Substantial start-up resources and research infrastructure will be made available.

Applications including a letter of motivation, curriculum vitae, publication list, concise statement of research and teaching interests, as well as the names and addresses (including email) of at least five referees and should be submitted in pdf format via the website:

https://academicjobsonline.org/ajo/jobs/7452

The evaluation process will begin immediately. Applications submitted prior to **November 1st, 2016** will be guaranteed consideration.

For additional information, please contact:
Professor Philippe Michel
Chair of the Mathematics Hiring Committee
Email: mathhiring2017@epfl.ch
Please include the tag "[MATHStat2017]" in the subject field of your email.

The School of Basic Sciences actively aims to increase the presence of women amongst its faculty, and female candidates are strongly encouraged to apply.

United States: Iowa City, IA

University of Iowa, Department of Biostatistics

Tenure-track faculty positions

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29982555

United States: College Park, MD

University of MD, School of Public Health, Dept of Epidemiology & Biostatistics

Assistant Professor in Epidemiology (tenure track)

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29273856

United States: Ann Arbor, MI

The University of Michigan

Tenure-track Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=18619140

United States: Piscataway, NJ

Rutgers, The State University of New Jersey

Open Rank Faculty

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29680291

United States: Ithaca, NY

Cornell University

Arthur and Helen Geoggrion Professor of Practice

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29342859

United States: Ithaca, NY

Cornell University

Faculty Position, all ranks

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=30103998

United States: New York, NY

Columbia Business School, DRO Division

Assistant/Associate Professor (Tenure Track)

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=30121037

Tenure/Tenured Track ORIE Faculty

Cornell University, Ithaca, NY

Cornell is a community of scholars, known for intellectual rigor and engaged in deep and broad research, teaching tomorrow's thought leaders to think otherwise, care for others, and create and disseminate knowledge with a public purpose.

Cornell University's School of Operations Research and Information Engineering (ORIE) seeks to fill multiple tenured/tenure-track faculty positions for its Ithaca campus. Applicants with research interests in e-commerce- and healthcare-related areas of supply chain logistics, and in integer programming, will receive primary consideration, although we welcome strong applicants from all research areas represented within ORIE. One of the faculty positions may include responsibilities within Cornell's Systems Engineering Program.

Requisite is a strong interest in the broad mission of the School, exceptional potential for leadership in research and education, an ability and willingness to teach at all levels of the program, and a PhD in operations research, mathematics, statistics, or a related field by the start of the appointment. Salary will be appropriate to qualifications and engineering school norms.

Cornell ORIE is a diverse group of high-quality researchers and educators interested in probability, optimization, statistics, simulation, and a wide array of applications such as e-commerce, supply chains, scheduling, manufacturing, transportation systems, health care, financial engineering, service systems and network science. We value mathematical and technical depth and innovation, and experience with applications and practice. Ideal candidates will have correspondingly broad training and interests. ORIE participates in particular in Cornell's interdisciplinary Systems Engineering Program.

Please apply online at **https://academicjobsonline.org/ajo/jobs/7553** with a cover letter, CV, statements of teaching and research interests, sample publications, at least three reference letters and, for junior applicants, a doctoral transcript. Applicants attending the INFORMS annual meeting are strongly encouraged to submit all application materials by October 30, 2016. All applications completed by November 15, 2016 will receive full consideration, but candidates are urged to submit all required material as soon as possible. Applications will be accepted until the positions are filled.

ORIE and the College of Engineering at Cornell embrace diversity and seek candidates who can contribute to a welcoming climate for students of all races and genders. Cornell University seeks to meet the needs of dual career couples, has a Dual Career program, and is a member of the Upstate New York Higher Education Recruitment Consortium to assist with dual career searches. Visit **http://www.unyherc.org/home/** to see positions available in higher education in the upstate New York area. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities. We strongly encourage qualified women and minority candidates to apply.

Find us online at http://hr.cornell.edu/jobs or Facebook.com/CornellCareers

Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students and staff impart an uncommon sense of larger purpose and contribute creative ideas to further the university's mission of teaching, discovery and engagement. Located in Ithaca, NY, Cornell's far-flung global presence includes the medical college's campuses on the Upper East Side of Manhattan and in Doha, Qatar, as well as the new CornellNYC Tech campus to be built on Roosevelt Island in the heart of New York City.

Diversity and Inclusion are a part of Cornell University's heritage. We're an employer and educator recognized for valuingAA/EEO, Protected Veterans, and Individuals with Disabilities.

United States: Corvallis, OR

Oregon State University: System Biology, Genomics and Informatics Faculty

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29650558

United States: Seattle, WA

Fred Hutchinson Cancer Research Center

Biostatistician, Faculty Member

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=29169953

International Calendar of Statistical Events

IMS meetings are highlighted in maroon with the IMS logo, and new or updated entries have the NEW or UPDATED symbol.
Please submit your meeting details and any corrections to Elyse Gustafson: erg@imstat.org

September 2016

September 5–8: Manchester, UK. **RSS 2016 International Conference** w www.rss.org.uk/conference2016

September 6–10: Minsk, Republic of Belarus. **Computer Data Analysis and Modeling: Theoretical and Applied Stochastics (CDAM 2016)** w http://www.cdam.bsu.by

September 7–10: Almaty, Kazakhstan. **Third International Conference on Analysis and Applied Mathematics** w http://www.icaam-online.org

September 15–16: Ghent, Belgium. **Flexible Statistical Modeling past, present and future** w http://www.fsm16.ugent.be/

September 22–23 (Hackathon September 21): Boulder, CO, USA. **6th International Workshop on Climate Informatics** w https://www2.cisl.ucar.edu/events/workshops/climate-informatics/2016/home

September 26–27: Munich, Germany. **7th CEQURA Conference on Advances in Financial and Insurance Risk Management** w http://www.cequra.uni-muenchen.de/conference2016

September 28–30: Washington DC. **2016 ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop** w http://www.amstat.org/meetings/biopharmworkshop/2016/

IMS September 30–October 1: University of California, Davis, USA. **Peter Hall Memorial Conference** w http://www.stat.ucdavis.edu/hallmemorialconference/

September 30–October 2: St Louis, MO, USA. **Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI)** w http://www.math.wustl.edu/~kuffner/WHOA-PSI.html

October 2016

October 12–14: Columbia, South Carolina, USA. **Latent Variables 2016 Conference** w http://www.stat.sc.edu/latent-variables-2016

October 13–14: Poznan, Poland. **eRum 2016 (European R users meeting)** w http://erum.ue.poznan.pl/

October 14–16: Niagara Falls, Canada. **International Conference on Statistical Distributions and Applications (ICOSDA 2016)** w http://people.cst.cmich.edu/lee1c/icosda2016/

NEW October 15: Pittsburgh, PA, USA. A celebration in honor of Steve Fienberg w http://www.stat.cmu.edu/fienberg2016

October 20–22: Charlotte, NC, USA. **2016 Women in Statistics and Data Science Conference** w http://ww2.amstat.org/meetings/wsds/2016/index.cfm

IMS October 21–23: La Jolla, California, USA. Random processes and time series: theory and applications (A conference in honor of Murray Rosenblatt) w http://www.math.ucsd.edu/~rosenblattconf/

November 2016

November 7–9: University of Tennessee, Knoxville, USA. **NIMBioS Workshop: Next Generation Genetic Monitoring** w http://www.nimbios.org/workshops/WS_nextgen

November 9–13: Miami, FL. **International Conference on Questionnaire Design, Development, Evaluation, and Testing** w http://www.amstat.org/meetings/qdet2/index.cfm

November 18–19: Ghaziabad (Delhi NCR), India. **International Conference on Computer Systems & Mathematical Sciences** w http://www.its.edu.in/iccsms-2016

December 2016

December 4–9: Atlantic City, NJ, USA. **72nd Annual Deming Conference on Applied Statistics** w www.demingconference.com

December 5–9: San José, Costa Rica. **XIV CLAPEM** w http://www.clapem.emate.ucr.ac.cr/

December 5–9: Canberra, Australia. **Australian Statistical Conference, 14th Australasian Data Mining Conference, 9th**

Conference on Teaching Statistics w www.asc2016.com.au

NEW December 10–12: Parkville, Australia. ACEMS Workshop in Honour of Peter Gavin Hall w http://acems.org.au/news-events/events/acems-workshop-in-honour-of-peter-gavin-hall/

NEW December 12–15: Multan, Pakistan. 14th International Conference on Statistical and Allied Sciences (ICCS-14)

December 15–17: Taipei, Taiwan. **Conference on Experimental Designs and Analysis (CEDA) 2016** w http://www3.stat.sinica.edu.tw/ceda2016/

December 19–21: College of Engineering Pune, Maharashtra, India. **IEEE International Conference on Computing, Analytics and Security Trends** w http://cast2016.coep.org.in/

December 19–22: Chennai, India. **Statistical Methods in Finance 2016** w http://www.cmi.ac.in/~sourish/StatFin2016/

ims December 19–22: Shanghai, China. **10th ICSA International Conference** w http://www.math.sjtu.edu.cn/conference/2016icsa/

December 21–23: Kolkata, India. **Platinum Jubilee International Conference on Applications of Statistics** w http://stat.caluniv.in/platinum/

January 2017

NEW January 23–25: Eindhoven, The Netherlands Young European Statistician (YES VIII) w http://www.eurandom.nl/events/workshops/2017/YES_VIII/

NEW January 23–25: Lunteren, The Netherlands. 16th Winter school on Mathematical Finance w https://staff.fnwi.uva.nl/p.j.c.spreij/winterschool/winterschool.html

NEW January 30–February 3: Bangkok, Thailand. Bangkok Workshop on Discrete Geometry and Statistics w http://thaihep.phys.sc.chula.ac.th/BKK2017DSCR/

March 2017

ims March 8–10: Washington DC, USA. **Reproducibility of Research: Issues and Proposed Remedies** w http://www.nasonline.org/programs/sackler-colloquia/upcoming-colloquia/

April 2017

NEW April 30–May 5: Ascona, Switzerland. Statistical Challenges in Single-Cell Biology w https://www.bsse.ethz.ch/cbg/cbg-news/ascona-2017.html

May 2017

NEW ims May 5–13: Erice, Sicily, Italy. **Stochastic Methods in Game Theory** w https://sites.google.com/site/ericegametheory2017

June 2017

June 20–23: Riverside, CA, USA. **10th International Conference on Multiple Comparison Procedures** w http://www.mcp-conference.org/hp/2017

ims June 24–28: Santa Fe, NM, USA. **2017 WNAR/IMS Meeting** w TBC

June 26–30: Delft, The Netherlands. **10th Conference on Extreme Value Analysis: EVA 2017** w www.eva2017.nl

ims June 28–July 1: Nanning, Guangxi Province, China. **2017 IMS-China International Conference on Statistics and Probability** w TBC

July 2017

July 2–7: Groningen, The Netherlands. **IWSM 2017** w http://iwsm2017.webhosting.rug.nl/

July 9–13: Vigo, Spain. **38th Annual Conference of the International Society for Clinical Biostatistics** w TBC

Continues on **page 26**

International Calendar *continued*

June 2017 *continued*

July 16–21: Marrakech, Morocco. **61st ISI World Statistics Congress 2017** **w** http://www.isi2017.org/

ims July 24–28: Moscow, Russia. **39th Conference on Stochastic Processes and their Applications (SPA)** **w** TBC

ims July 29 – August 3: Baltimore, USA. **IMS Annual Meeting at JSM 2017** **w** http://amstat.org/meetings/jsm/

Come to JSM 2017: this is Baltimore Inner Harbor at night (photo by Mitch Lebovic)

August 2017

August 28–September 1: Vienna, Austria. **CEN-ISBS Vienna 2017 Joint Conference on Biometrics & Biopharmaceutical Statistics** **w** www.cenisbs2017.org

July 2018

ims July 2–6: Vilnius, Lithuania. **Joint 2018 IMS Annual Meeting and 12th International Vilnius Conference on Probability Theory & Mathematical Statistics** **w** TBC

July 9–13: Edinburgh, UK. **ISBA 2018 World Meeting** **w** TBC

NEW July 16–20: Bristol, UK. 33rd International Workshop on Statistical Modelling **w** http://www.statmod.org/workshops.htm

ims July 28 – August 2: Vancouver, Canada. **JSM 2018** **w** http://amstat.org/meetings/jsm/

July 2019

ims July 27–August 1: Denver, CO, USA. **IMS Annual Meeting at JSM 2019** **w** http://amstat.org/meetings/jsm/

August 2020

ims August 1–6: Philadelphia, PA, USA. **JSM 2020** **w** http://amstat.org/meetings/jsm/

NEW ims August 17–21: Seoul, Korea. **Bernoulli/IMS World Congress on Probability and Statistics** **w** TBC

August 2021

ims August 7–12: Seattle, WA, USA. **IMS Annual Meeting at JSM 2021** **w** http://amstat.org/meetings/jsm/

August 2022

ims August 6–11: Washington DC, USA. **JSM 2022** **w** http://amstat.org/meetings/jsm/

Are we missing something? If you know of any statistics or probability meetings which aren't listed here, please let us know.
You can email the details to Elyse Gustafson at erg@imstat.org, or you can submit the details yourself at http://www.imstat.org/submit-meeting.html
We'll list them here in the Bulletin, and on the IMS website too, at www.imstat.org/meetings

Membership and Subscription Information

Journals

The scientific journals of the Institute of Mathematical Statistics are *The Annals of Statistics*, *The Annals of Probability, The Annals of Applied Statistics*, *The Annals of Applied Probability*, and *Statistical Science*. The *IMS Bulletin* is the news organ of the Institute.

Individual Memberships

Each individual member receives the *IMS Bulletin* (print and/or electronic) and may elect to receive one or more of the five scientific journals. Members pay annual dues of $115. An additional $74 is added to the dues of members for each scientific journal selected ($49 for *Stat Sci*). **Reduced membership** dues are available to full-time students, new graduates, permanent residents of countries designated by the IMS Council, and retired members.

Individual and General Subscriptions

Subscriptions are available on a calendar-year basis. **Individual subscriptions** are for the personal use of the subscriber and must be in the name of, paid directly by, and mailed to an individual. Individual subscriptions for 2016 are available to *The Annals of Applied Probability* ($199), *The Annals of Applied Statistics* ($199), *The Annals of Probability* ($199), *The Annals of Statistics* ($199), *Statistical Science* ($174), and *IMS Bulletin* ($125). **General subscriptions** are for libraries, institutions, and any multiple-readership use. Institutional subscriptions for 2016 are available to *The Annals of Applied Probability* ($475), *The Annals of Applied Statistics* ($475), *The Annals of Probability* ($475), *The Annals of Statistics* ($475), *Statistical Science* ($270), and *IMS Bulletin* ($118). Airmail rates for delivery outside North America are $135 per title.

IMS Bulletin

The *IMS Bulletin* publishes articles and news of interest to IMS members and to statisticians and probabilists in general, as well as details of IMS meetings and an international calendar of statistical events. Views and opinions in editorials and articles are not to be understood as official expressions of the Institute's policy unless so stated; publication does not necessarily imply endorsement in any way of the opinions expressed therein, and the *IMS Bulletin* and its publisher do not accept any responsibility for them. The *IMS Bulletin* is copyrighted and authors of individual articles may be asked to sign a copyright transfer to the IMS before publication.

The *IMS Bulletin* (ISSN 1544-1881) is published eight times per year in January/February, March, April/May, June/July, August, September, October/November and December, by the Institute of Mathematical Statistics, 3163 Somerset Dr, Cleveland, Ohio 44122, USA. Periodicals postage paid at Cleveland, Ohio, and at additional mailing offices. Postmaster: Send address changes to Institute of Mathematical Statistics, 9650 Rockville Pike, Suite L3503A, Bethesda, MD 20814-3998.

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Information for Advertisers

General information: The *IMS Bulletin* and webpages are the official news organs of the Institute of Mathematical Statistics. The *IMS Bulletin*, established in 1972, is published 8 times per year. Print circulation is around 2,000 paper copies, and it is also free online in PDF format at http://bulletin.imstat.org, posted online about two weeks before mailout (average downloads over 8,000). Subscription to the *IMS Bulletin* costs $125. To subscribe, call 877-557-4674 (US toll-free) or +1 216 295 2340 (international), or email staff@imstat.org. The IMS website, http://imstat.org, established in 1996, receives over 30,000 visits per month. Public access is free.

Advertising job vacancies

A single 60-day online job posting costs just $285.00. We will also include the basic information about your job ad (position title, location, company name, job function and a link to the full ad) in the *IMS Bulletin* at no extra charge. See http://jobs.imstat.org

Advertising meetings, workshops and conferences

Meeting announcements in the *Bulletin* and on the IMS website at http://imstat.org/meetings are free. Send them to Elyse Gustafson; see http://www.imstat.org/program/prog_announce.htm

Rates and requirements for display advertising

Display advertising allows for placement of camera-ready ads for journals, books, software, etc. A camera-ready ad should be sent as a grayscale PDF/EPS with all fonts embedded. Email your advert to Audrey Weiss, IMS Advertising Coordinator admin@imstat.org or see http://bulletin.imstat.org/advertise

	Dimensions: width x height	Rate
1/3 page	4.9" wide x 4" high (125 x 102 mm)	$250
1/2 page	7.5" wide x 4" high (190 x 102 mm)	$310
2/3 page	4.9" wide x 8" high (125 x 203 mm)	$365
Full page (to edge, including 1/8" bleed)	8.75" wide x 11.25" high (222 mm x 286 mm)	$420
Full page (within usual *Bulletin* margins)	7.5" wide x 9.42" high (190 mm x 239 mm)	$420

Deadlines and Mail Dates for *IMS Bulletin*

Issue	Deadline	Online by	Mailed
1: January/February	**December 1**	December 15	January 1
2: March	**February 1**	February 15	March 1
3: April/May	**March 15**	April 1	April 15
4: June/July	**May 1**	May 15	June 1
5: August	**July 1**	July 15	August 1
6: September	**August 15**	September 1	September 15
7: Oct/Nov	**September 15**	October 1	October 15
8: December	**November 1**	November 15	December 1

Volume 45 · Issue 6

The purpose of the Institute is to foster the development and dissemination of the theory and applications of statistics and probability

IMS: Organized September 12, 1935

91-1798 (print)
894X (online)

THE ANNALS of PROBABILITY

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INSTITUTE OF MATHEMATICAL STATISTICS

Articles

Vol. 44, No. 4—July 2016