

October/November 2022

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## ICSDS Florence update

Organizers Annie Qu and Regina Liu

**write:** We are delighted to report that the 2022 ICSDS (International Conference on Statistics and Data Science; December 13–16, 2022, in Florence, Italy) has received a tremendous response, including many outstanding invited speakers coming from different countries and continents, covering a wide range of subjects in statistics and data science, in theory, methodology and applications. Due to the unprecedented large number of participants and the space constraint

of the venue, ***all speakers (invited or contributed) and poster presenters are now required to register by November 15, in order to be on the program.***

The meeting website is <https://sites.google.com/view/icsds2022>.

The ICSDS award committee is pleased to announce that the following 10 PhD students are awarded 2022 ICSDS Student Travel Awards. The selection is made from 53 applications based on the quality of their manuscripts in statistics and data science. Please join us in congratulating these award recipients:

**Samantha Dean**, Yale University, USA: *Effective treatment allocation strategies conditional on individuals' characteristics under partial interference in randomized experiments*

**Bertille Follain**, Ecole Normale Supérieure/INRIA Paris, France: *High-dimensional changepoint estimation with heterogeneous missingness*

**Arkaprabha Ganguli**, Michigan State University, USA: *Feature selection integrated deep learning for ultrahigh dimensional and highly correlated feature space*

**Shimeng Huang**, University of Copenhagen, Denmark: *Supervised Learning and Model Analysis with Compositional Data*

**Takuya Koriyama**, Rutgers University, USA: *Asymptotic Analysis of Parameter Estimation for Ewens–Pitman Partition*

**Hanâ Lbath**, University Grenoble Alpes, INRIA, France: *Clustering-Based Inter-group Correlation Estimation*

**Marcos Matabuena**, University of Santiago de Compostela, Spain: *Kernel Biclustering algorithm in Hilbert Spaces*

**Lorenzo Pacchiardi**, University of Oxford, UK: *Likelihood-Free Inference with Generative Neural Networks via Scoring Rule Minimization*

**Javier Aguilar Romero**, SimTech Stuttgart University, Germany: *Intuitive Joint Priors for Bayesian Linear Multilevel Models: The R2-D2-M2 prior*

**Ye Tian**, Columbia University, USA: *Unsupervised Multi-task and Transfer Learning on Gaussian Mixture Models.*



*Inside the dome of Florence's cathedral*

## Contact information

IMS Bulletin Editor: Tati Howell  
[bulletin@imstat.org](mailto:bulletin@imstat.org)

Managing Editor: Bob Keener

Contributing Editors: Radu Craiu, Anirban DasGupta, Yoram Gat, Ruobin Gong, David Hand, Takis Konstantopoulos, Xiao-Li Meng and Kavita Ramanan

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### IMS Business Office

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**e** [erg@imstat.org](mailto:erg@imstat.org)

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Executive Secretary: Edsel Peña  
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## IMS Members' News

### ISI membership elections: third round 2022

Several IMS members are among those honored as elected members of the International Statistical Institute (ISI) in the third round of 2022 ISI membership elections. The names and nationalities of the newly elected members are given below:

**Sanjay Chaudhuri** (India). Sanjay Chaudhuri is an Associate Professor in the Department of Statistics and Data Science, National University of Singapore. His research interests are the development and analysis of statistical methodologies, in particular based on empirical likelihood; analysis of complex survey data; order-restricted inference; graphical Markov models; survival analysis; and the application of statistics to real life problems.



Sanjay Chaudhuri

**Jaeyong Lee** (South Korea). Jaeyong Lee is a professor in the Department of Statistics at Seoul National University in South Korea. His research focuses on all aspects of Bayesian statistics. In particular, he studied nonparametric Bayesian statistics, high-dimensional regression, and covariance estimation in Bayesian statistics. He is an Associate Editor of the *Journal of Statistical Planning and Inference* and *Journal of Korean Statistical Society* and previously was an AE for *Bayesian Analysis* and *Biometrics*. He was the 2020 recipient of the Korea Gallup Academic Award from the Korea Statistical Society.



Jaeyong Lee

**Guanqun Cao** (USA). Guanqun Cao is an Associate Professor in the Department of Mathematics and Statistics at Auburn University. Working at the interface of statistics, mathematics, and computer science, Dr. Cao is interested in developing cutting-edge statistical methods for solving issues related to data science and big data analytics. Specifically, she lists her research interests as functional/longitudinal data, non- and semi-parametric models, polynomial spline smoothing, and count data.



Guanqun Cao

**Guanyu Hu** (USA). An Assistant Professor at the University of Missouri–Columbia, Guanyu Hu's research interests include statistical methods development on Bayesian nonparametric methods, spatial point process, causal inference, survival analysis; and statistical applications in sports analytics, econometrics, environmental science, clinical trials, educational and psychological measurement. Hu received one of last year's IMS New Researcher Travel Awards.



Guanyu Hu

You can read about the other new elected members of the ISI at <https://www.isi-web.org/news/node-2321>.



### Don't keep your news to yourself!

If you've won an award, received recognition, or earned an accolade, share it with your community.

Tell us, and we'll tell them: [bulletin@imstat.org](mailto:bulletin@imstat.org)

# David Cox: A complement to his obituary

IMS Fellow Klaus Krickeberg shares some of his memories of and reflections on Sir David Cox, as a complement to the obituary that appeared in the April/May 2022 issue.

The *IMS Bulletin* published in Volume 51, Issue 3, an extensive and thorough account of the scientific work of Sir David Roxbee Cox (David, for short). Written by Heather Battey and Nancy Reid, it sketches David's contributions to stochastic processes and statistical inference; these are indeed the fields where most of his scientific work is situated.

I had close contact with David for a period of about 50 years. In this complement to his obituary, I would like to add a mention of an influential book, written in a somewhat different spirit, *Multivariate Dependencies: Models, Analysis and Interpretation*, by David Cox and Nanny Wermuth, published in 1996.

Let me now turn to an aspect which I will call David's personality. By this, I mean that in his judgments and statements he was always absolutely independent, open, rigorous and honest. He would never follow a trend. I am going to illustrate this by three examples.

Firstly, the doubly stochastic Poisson process, which we both worked on, although from different angles. It was me who called it the "Cox process". David protested; he did not want the credit. Indeed, a relatively unknown author had already used such a construction in a very particular problem of applied statistics.

The second example concerns the First World Congress of the Bernoulli Society in Tashkent in 1982. I was Chairman of the Program Committee and I asked David to be Deputy Chairman. His decisions on the choice of speakers were, of course, excellent. Above all, his judgments about possible speakers were never influenced by non-scientific factors, for example by "This person belongs to such-and-such school, or to such-and-such country," or by "He or she is a friend of an influential person." Not surprisingly, the Program Committee was indeed a few times under pressure to take such factors into account.

Finally, David was able to change his mind when confronted with new facts; he was not afraid of being regarded as fickle. For example, in 1981, Argentina had invited the International Statistical Institute (ISI) to hold the 43<sup>rd</sup> World Statistics Congress in Buenos Aires. This would have been during the military dictatorship in Argentina which lasted from 1976 to 1983. David and I were in a committee that had to advise the ISI whether to accept this invitation. Everybody, including David, was against it, except me. I had worked in Argentina and I argued that the young statisticians there had very much looked forward to this congress because it would allow them to break up their isolation. David changed its mind and voted for holding the Congress. It ended up taking place and was useful; I do not think that the military government profited much from it.

## 2022 Hukum Chandra Memorial Prize awarded to Mahmoud Torabi

The International Association of Survey Statisticians (IASS) prize committee unanimously agreed to award the 2022 Hukum Chandra Memorial Prize to Prof. **Mahmoud Torabi** (University of Manitoba) for the paper "Sumca: Simple, Unified, Monte-Carlo Assisted Approach to Second-order Unbiased MSPE Estimation". Prof. Torabi will receive the prize and provide a special invited webinar on 26 October 2022.



Sir David Cox



Mahmoud Torabi

 = access published papers online

## IMS Journals and Publications


*Annals of Statistics*: Enno Mammen, Lan Wang

<https://imstat.org/aos>

 <https://projecteuclid.org/aos>


*Annals of Applied Statistics*: Ji Zhu

<https://imstat.org/aoas>

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*Annals of Probability*: Christophe Garban, Alice Guionnet

<https://imstat.org/aop>

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*Annals of Applied Probability*: Kavita Ramanan, Qiman Shao

<https://imstat.org/aap>

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*Statistical Science*: Sonia Petrone

<https://imstat.org/sts>

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## IMS Collections

 <https://projecteuclid.org/imsc>

*IMS Monographs and IMS Textbooks*: Mark Handcock

<https://www.imstat.org/journals-and-publications/ims-monographs/>


## IMS Co-sponsored Journals and Publications

*Electronic Journal of Statistics*: Grace Yi & Gang Li

<https://imstat.org/ejs>

 <https://projecteuclid.org/ejs>

*Electronic Journal of Probability*: Bénédicte Haas

 <https://projecteuclid.org/euclid.ejp>


*Electronic Communications in Probability*:

Siva Athreya

 <https://projecteuclid.org/euclid.ecp>


*Journal of Computational and Graphical Statistics*:

Galin Jones, Faming Liang <https://www.amstat.org/ASA/Publications/Journals.aspx>

 log into members' area at [imstat.org](https://imstat.org)


*Probability Surveys*: Mikhail Lifshits

<https://imstat.org/ps>

 <https://www.i-journals.org/ps/>

*Statistics Surveys*: Marloes Maathuis

<https://imstat.org/ss>

 <https://projecteuclid.org/euclid.ssu>

## IMS-Supported Journals


*ALEA: Latin American Journal of Probability and Statistics*: Daniel Remenik

 <http://alea.impa.br/english>


*Annales de l'Institut Henri Poincaré (B)*:

Giambattista Giacomini, Yueyun Hu

<https://imstat.org/aihp>

 <https://projecteuclid.org/aihp>

*Bayesian Analysis*: Mark Steel

 <https://projecteuclid.org/euclid.ba>

*Bernoulli*: Davy Paindaveine

<https://www.bernoulli-society.org/>

 <https://projecteuclid.org/bj>

*Brazilian Journal of Probability and Statistics*:

Mário de Castro

<https://imstat.org/bjps>

 <https://projecteuclid.org/bjps>


## IMS-Affiliated Journals

*Observational Studies*: Nandita Mitra

 <https://obs.pennpress.org/>

*Probability and Mathematical Statistics*:

Krzysztof Bogdan, Krzysztof Dębicki

 <http://www.math.uni.wroc.pl/~pms/>

*Stochastic Systems*: Shane Henderson

 <https://pubsonline.informs.org/journal/stsy>



# Sound the Gong: In Defense of an *Explicandum*

Ruobin Gong, Rutgers University, responds to Chris Burdzy's Presidential Address, delivered at the 2022 IMS meeting in London, and printed in the previous issue.

"When I use a word," Humpty Dumpty said to Alice, in rather a scornful tone, "it means just what I choose it to mean—neither more nor less."

Lewis Carroll, *Through the Looking Glass*

In his Presidential Address, Professor Chris Burdzy urged the IMS community to "stop using the term 'subjective' in reference to any part of statistics." He further professed emotionally that "I love Bayesian statistics because it is objective. It hurts my feelings when people suggest that Bayesian statistics is subjective or partly subjective." This essay argues that Burdzy's call falls prey to precisely the danger it sets off to apprise. It relies on a hazy interpretation of the word "subjectivity" that does not adequately reflect the complex evolution of its meanings through history, and is incongruent with the modern standards of responsible scientific practice.

Subjectivity is a loaded word. In the context of science, subjectivity carries negative connotations, two of which being "unfettered freedom" and "contaminant of rational thinking" (Burdzy, 2022, pp. 1). By the sound of it, neither quality is quite what we should expect from a respected scientist. Further, much unlike subjectivity which the audience finds detestable, its counterpart objectivity is often met with a lauded reception.

That may all be true. Setting emotions aside, however, are negative connotations a sufficient reason to call for the abolishment of a word from our vocabulary, and positive connotations reason for endorsement? Is subjectivity, a term as old as the human languages that index it in their dictionaries, no more than some fuzzy and terrible feeling that every scientist (data scientist included) is morally obliged to condemn?

Subjectivity and objectivity are contextually encumbered, emotionally charged, yet rarely understood nor explicated. Were we to protest the use of one and parade that of the other, one question would need clarification first. When we speak of subjectivity and objectivity in science, what do we exactly mean?

In a rhetorical sense, objectivity has long been considered one of the virtues in science. It is often discussed in tandem with other desiderata such as truth-seeking, error avoidance, and accuracy (e.g. Levi, 1967, Joyce, 1998). The meaning of objectivity has never been static nor plain. A quick foray into the history of science would tell us that both subjectivity and objectivity carry temporally dynamic and linguistically fluid meanings that are exemplified through centuries of scientific practice.

In *Objectivity* (2007), Lorraine Daston and Peter Galison discuss three competing notions of objectivity that are still at play today. The first kind of objectivity—let us label it as Objectivity<sub>1</sub>—entails the *idealized* depiction of the object under study. A scientist's pursuit under idealized objectivity is to obtain a universal characterization of a class of objects. She distills that idealization from specimens of a same kind and renders them into a single summary that is nevertheless more perfect than any of them. Idealized objectivity instructs scientists to create exemplars that are devoid of imperfections (and even individualities) of its subjects.

The second kind of objectivity confers a nearly opposite meaning. Objectivity<sub>2</sub> commands the *mechanical* representation of the subject under study, in a way that is wholly detached from the idiosyncrasies of the observer rather than the subject itself.

The observer is asked to be blindly faithful to her observational apparatus. Everything must be recorded exactly according to what is seen, heard, or otherwise measured: every dent, every blur, every bit of fallen dust or missing corner.

One begins to sense the intricacy of explicating objectivity and the challenge of separating subjectivity from it. On the surface, mechanical objectivity (Objectivity<sub>2</sub>) is in better agreement with how the ordinary word "objectivity" resonates. Aligned with the Cartesian philosophical tradition, the mechanical definition emphasizes explicit external standards that strips away any human tampering that may cause unreliability. However, mechanical objectivity may be executed to a fault. In the absolute lack of intervention by the observer, every feature must be mindlessly preserved even if they're known or widely acknowledged to be artifacts or consequences of device malfunction. It also demands the scientist to break away from her own identity, which encompasses not only her biases (which it sets off to avoid) but also her informed opinions and educated perspectives. By contrast, idealized objectivity (or Objectivity<sub>1</sub>) often provides great pedagogical utility as it allows a teacher to reveal most directly and efficiently to a student what she believes to be the "essence" of their subject. However, achieving idealized objectivity relies entirely on the observing scientist to decide what aspect of that she sees is, and is not, part of this essence. In this sense, idealized objectivity agrees surprisingly with the word "subjectivity" as is familiar to most. Thus, if we follow the simple predicate that "what objectivity is not, subjectivity is," we arrive at the conclusion that Objectivity<sub>1</sub> is subjectivity in relation to Objectivity<sub>2</sub>, whereas Objectivity<sub>2</sub> is subjectivity in relation to Objectivity<sub>1</sub>. That might seem absurd, but is not incorrect.

*Continues on page 5*

There is a third kind of objectivity. Objectivity<sub>3</sub> advocates for an *interpreted* characterization of the scientific object. It emphasizes the judicious injection of trained judgment when curating and utilizing observations obtained from the material world. Interpreted objectivity seeks a middle ground between idealized and mechanical objectivity, inheriting aspects of both that are conducive to productivity. It recognizes that trained judgment is a small yet necessary component in advancing science, a concept that invariably escapes standardized measurement. This did not deter the scientific community from endorsing interpreted objectivity and implementing dynamic mechanisms to ground and to balance the multiplicity of trained judgments. As Ted Porter (1996) argues, science is fundamentally a social activity. Scientific hypotheses and findings are shaped through personal exchanges, collegial discussions, and community evaluations. The peer-review system, for example, grants the ultimate judgment of right from wrong to individual scientists. While ridden with problems of its own, we have yet to find a competitive alternative solution that might supplant peer review.

The three kinds of objectivity are widely embodied by the prevailing scientific norms on an ever-changing landscape. Daston and Galison's expansive investigations are founded on a wide range of examples from cell biology to astrophysics. I add that these scientific ideals are as vividly illustrated by the histories of statistics and data science. Tracing back to the mid-16th century, statistics made its debut as the *science of the state* (Hacking, 1990). A utilitarian service to governments, our young discipline was tasked with *data curation*—births, deaths, illnesses, for the calculation of taxation and military recruitment. A pursuit of mechanical objectivity was evident through the

ever-growing levels of detail and exactness of the tabulations. With the advent of social statistics, idealized objectivity took its turn and found its expression through *data reduction*, epitomized by Adolphe Quetelet and his “average man” (*l'homme moyen*; Quetelet, 1831, see Stigler, 2002). A single numerical summary is artificially construed to describe a group of people: crude and subjective to some, effective and objective to others. After statistics gained formal mathematical ground and developed multiple theories of inference—Bayesian, Frequentist, even Fiducial—it began to exemplify interpreted objectivity through advising the science of *data modeling*. At its finest, modeling is both the artful reduction of rigorously curated data and the rigorous curation of knowledge learned through such reduction. As Sabina Leonelli (2019) puts it, “data are forged and processed through instruments, formats, algorithms, and settings that embody specific theoretical perspectives on the world.” It is a perfect showcase of how interpreted objectivity is both a continuation and a combination of mechanical and idealized objectivity. Data science today encompasses all of data curation, data reduction, and data modeling, and every aspect of it is simultaneously objective *and* subjective by nature.

Having taken on a broader and time-transcendent perspective, we see that subjectivity and objectivity are never diametrically opposed concepts, nor are they mutually exclusive. Not only do subjectivity and objectivity rely on one other to derive meanings, but as new scientific contexts form, they too morph into new concepts and pick up qualities that used to be associated with each other. Scientists who aspire to objectivity, however defined, cannot accomplish much without every so often calibrating their compass of inquiries against the respective subjectivity standards.

Banishing subjectivity from objective science is as nonsensical as banishing zero from the laws of arithmetic. If subjectivity were gone, what is left of the objective ideal is like a tree with rotten roots, a ruler with faded graduations.

When a community decides that a particular word shall not be uttered, the good reasons are usually that it is obscene, offensive, or otherwise threatening to our collective interest. Subjectivity is none of those things. As debates surrounding objectivity and subjectivity populate the peripherals of modern scientific discourse, an informed discussion around their meanings, as well as how these meanings adapt to questions of our time, becomes a literacy requirement. A true scientific spirit confronts and conquers things that are foreign, ambiguous, or difficult to explain. To explicate what needs explication using a combination of factual evidence and sound reasoning is the responsible scientific practice.

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# OBITUARY: Ole Barndorff-Nielsen

## 1935–2022

OLE EILER BARNDORFF-NIELSEN passed away on June 26, 2022, in Aarhus after a short period of illness. He was born in Copenhagen on March 18, 1935. He made vast contributions in several fields of knowledge, including statistics, probability, econometrics, and theoretical physics. The velocity at which the sad news of his death spread throughout the international community of statistics and probability is evidence of Ole's exceptional and highly respected position internationally.

After studies in mathematics and actuarial science at the University of Copenhagen, Ole graduated in 1960 with a degree from the newly founded (in 1954) Department of Mathematics at Aarhus University, where he was hired as an assistant professor the same year. There he established and built a strong group of scientists working in statistics, probability and related areas, which he led over the following 45 years. He was one of the most cited and influential scientists in stochastics with a remarkable production of more than 200 scientific papers and eight textbooks written with more than 80 coauthors. His scientific production was comprehensive, as is clear from the brief review below of some of his most important contributions. An extraordinary curiosity and enthusiasm fueled his ambitious scientific work. Even at a very high age, he was eager to study newly developed areas within statistics and probability; for example, he initiated and developed the theory of ambit stochastics with collaborators over the last ten years of his life. Throughout his career, Ole was a generous, inspiring and supportive mentor and collaborator for numerous young scientists, many of whom have developed into leading experts in statistics, probability and mathematical finance.

Ole was undoubtedly one of the most

important and visionary among those involved in building and developing the Department of Mathematics at Aarhus University. He also played important roles in two Danish National Research Foundation centers of excellence. He was a visionary scientific director of MaPhySto, which had a lasting effect on Danish mathematics. Later he played a central role in the econometrics center CREATES, where he initiated several cross-disciplinary collaborations. In 2014 he received the Rigmor and Carl Holst-Knudsen Science Prize in recognition of his lifelong contributions.

Internationally, Ole played an innovative and visionary role too. For example, he was a driving force in the creation of the *Scandinavian Journal of Statistics* and in the foundation of the Bernoulli Society, for which he served as chair of the European Regional Committee and later as a very influential president. He was the first editor-in-chief for the society's highly ranked journal, *Bernoulli*. Ole was an Honorary Fellow of the Royal Statistical Society, a Fellow of the Institute of Mathematical Statistics, and an elected member of the International Statistical Institute. He received honorary doctoral degrees from Université Paul Sabatier, Toulouse, and KU Leuven, and in 2001 he joined an exclusive group of international scientists as recipient of the German Humboldt Prize. Moreover, he was a member of the Royal Danish Academy of Sciences and Letters and of Academia Europaea, and a corresponding fellow of the Royal Society of Edinburgh.

Early in his career, Ole made important contributions to the exact theory of exponential families and the foundations of statistics, in particular sufficiency and conditional inference. His book *Information and Exponential Families in Statistical Theory*



Ole Eiler Barndorff-Nielsen in 2007

is still a main reference. In 1977 he introduced the class of generalized hyperbolic distributions, thus formalizing heuristic ideas of Brigadier Ralph Alger Bagnold (who became a good friend) concerning the size distribution of sand. These distributions have turned out to be widely useful, for instance in turbulence and finance.

Later Ole contributed significantly to the asymptotic theory of statistics, his main contribution being what is now called the Barndorff-Nielsen formula, which he himself called the  $p^*$ -formula. It gives the conditional distribution of the maximum likelihood estimator given an approximately ancillary statistic, generalizing a formula by R.A. Fisher. He collaborated closely with Sir David Cox on asymptotic theory. In this period, Ole was also involved in the investigation of what insights might be gained by applying differential geometric tools to statistical models, which—under weak regularity conditions—are Riemannian manifolds. One of his main contributions was the observed Riemannian geometry of a statistical manifold.

Perhaps Ole's most widely influential work is his many contributions to financial econometrics. Main results were the Barndorff-Nielsen–Shephard model for the price of a financial asset, where the stochastic volatility was modelled by sums of Lévy-driven Ornstein–Uhlenbeck processes, and pathbreaking statistical methods for high-frequency financial time series. Much of this work was joint with Neil Shephard.

*Continues on page 7*

Ole was intrigued by the challenges and perspectives of developing an alternative theory of probability based on Voiculescu's concept of free independence in place of the classical concept, and he contributed importantly to the theory of infinite divisibility and Lévy processes in free probability. Some of this work came as a result of Ole's special connection to the Mexican scientific community, which was nourished by Ole's long and close friendship with Victor Pérez Abreu. Simultaneously Ole contributed, jointly with Richard Gill and Peter Jupp, to statistical inference for quantum experiments and introduced quantum analogs of key classical statistical concepts.

Late in his life, Ole returned to his previous interest in turbulence in a highly original way by developing a new model type that he called ambit processes, where the state is given as an integral of a so-called

Lévy basis over an ambit set. This is the set of points in space-time that are assumed to influence the present state. Ambit processes have also found applications in other research areas, e.g. growth modelling and brain imaging. Jointly with a group of young probabilists, Ole developed a new and vibrant area of probability theory, which he called ambit stochastics.

Ole was a very warm and positive person. His extraordinary intellect and indomitable optimism were main sources for his impressive career. Besides his scientific work, he was a passionate opera enthusiast and connoisseur with a special affection for Wagner. He was also a huge consumer of literature, spanning widely from classical novels to biographies. In 2018 he published his own autobiography entitled *Stochastics in Science: Some autobiographical notes*. Apart from describing Ole's exciting life

as a scientist, this book also gives a rare account on the developments in Danish and international probability and statistics since the 1950's from the point of view of a first-hand witness and major contributor. Ole's family was a crucial cornerstone in his life and he never missed an opportunity to emphasize the significance of the lifelong love and support from his wife, Bente.

Ole Eiler Barndorff-Nielsen will be greatly missed at Aarhus University, in the national and international stochastics communities and by numerous friends and colleagues worldwide, who can all find some consolation in their good fortune and privilege of having known him.

*Written by Rodrigo Labouriau, Aarhus University; Michael Sørensen, University of Copenhagen; and Steen Thorbjørnsen, Aarhus University*

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# OBITUARY: Bert Fristedt

## 1937–2020

Bert Fristedt died in his sleep on July 18, 2020, at the age of 83.

Bert was born on April 8, 1937 in Minneapolis. He spent his entire life in Minnesota, with the exception of his time in graduate school and one year each at the University of Wisconsin–Madison, and Liverpool University. He obtained a BS in mathematics from the University of Minnesota in 1959. His PhD thesis in mathematics, “Generalized variations, continuity, and Hausdorff measures of sample functions of stochastic processes with independent increments,” was obtained from the Massachusetts Institute of Technology under the direction of Henry McKean in 1963. Except for the two years in Madison and Liverpool and one year at Carleton College, Bert spent his entire academic career, 1963–2017, at the School of Mathematics, University of Minnesota.

Bert worked in the area of probability theory. From the 1960s into the 1980s, he followed the direction established by his PhD thesis, performing deep and detailed analysis of the behavior of Lévy processes. Primarily because of this work, he became a Fellow of the IMS in 1986. His collaborators at the time included several other IMS Fellows: David Aldous, Donald Berry, Patrick Fitzsimmons, Ronald Getoor, Priscilla Greenwood, William Pruitt, Larry Shepp, and James Taylor. Bert’s work with James Taylor earned him an Erdős number of 2. His publications appeared in the top journals for probability and statistics, including the *Annals of Mathematical Statistics*, *Annals of Probability*, and the *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete*.

Throughout his career, Bert also had great interest in problems that could be more easily described to the non-specialist.

For example, his foundational work with Donald Berry on one- and two-armed bandits culminated in the comprehensive and often-cited 1985 monograph *Bandit Problems: Sequential Allocation of Experiments*, written with Berry. Bert especially delighted in problems that involved the interaction between probability theory and other fields, such as combinatorics and game theory. Examples include his 1971 paper with David Heath in *Advances in Applied Probability*, “Searching for a Particle on the Real Line,” and his 1993 paper for *Transactions of the American Mathematical Society*, “The Structure of Random Partitions of Large Integers.”

Bert loved to share his extensive knowledge of probability theory with students, both verbally and in writing. The graduate text written with Lawrence Gray, *A Modern Approach to Probability Theory*, was published in 1997 and is still used. The advanced undergraduate text, *Filtering and Prediction: A Primer*, written with Naresh Jain and Nicolai Krylov, was published in 2007.

Bert was a thoughtful and successful teacher at the University of Minnesota, and was a recipient of the Morse-Alumni Distinguished Teaching Professor award. Bert taught classes in many different areas other than probability theory, including analysis, geometry, mathematical education, and combinatorics. He was a highly regarded instructor in the University of Minnesota Talented Youth Mathematics Program, and in the National Science Foundation Teacher Renewal Project. Bert was director of undergraduate studies, 1988–90 and coordinator of the Actuarial Science Program, 1982–83 and 1984–86.

Three graduate students completed their PhD under Bert’s direction: Jennie Hansen,



Bert Fristedt

John Hoffman, and Mike Weimerskirch. One student praised Bert’s inspiring approach to solving mathematics problems in and outside of class, portraying how mathematics is done, saying it felt like one was “going on a mathematical journey with him”. According to another student, “Bert’s door was always open, and he always had time. We talked often about teaching, from kindergarten on up, and I learned a lot from Bert about various methods to approach certain topics.”

Bert’s activity in education extended to the state and national levels. He played a major role, starting in 2001, in strengthening the K–12 state mathematics standards in Minnesota; in 2003, he served on the Minnesota Commissioner of Education’s committee to revise these standards. Bert was a member of the National Mathematics Advisory Panel reporting to the US Secretary of Education in 2008, which focused on the quality and rigor of national standardized mathematics tests.

On the lighter side, Bert was a prodigious source of baseball lore, a sport he followed closely. He was also an avid bridge, skat, and poker player, and helped develop a system for playing blackjack which he briefly used in Las Vegas. It is less well known that Bert gave up his football scholarship at the University of Minnesota to allow more time for his academic studies.

Written by Lawrence Gray,  
University of Minnesota



# Anirban's Angle: Midterm Mathematical Musings

Armchair expert Anirban DasGupta has been thinking about political predictions in the US midterm elections. He writes:

With the midterm elections in the US just around the corner and the next general election not too far away, political analysts and also common people are thinking about which factors influence the outcome of an election. There have been numerous studies, some formal and others informal, on this matter. I know I am not writing here about an original question, but maybe I could say something that the *Bulletin's* readers didn't know.

Let me list a few factors that many others have mentioned as possibly influential: consumer confidence, unemployment rate, gas prices, inflation, the Dow Jones, cost of healthcare, a feel-good index, current involvement in a war, domestic crime rate, Congressional performance, scandals, and the sitting President's charisma and popularity. Of course, there are many more. But somewhat arbitrarily, I decided to name 12 factors, and these 12.

Naturally, I looked at recent data. The party in the White House lost the following number of seats in the US House in the last 10 midterm elections: 26 (1982), 5 (1986), 8 (1990), 54 (1994), 4 gain (1998), 8 gain (2002), 32 (2006), 63 (2010), 13 (2014), 40 (2018). The sitting presidents at the time of these midterm elections were Ronald Reagan (1982 and 1986), George H.W. Bush (1990), Bill Clinton (1994 and 1998), George W. Bush (2002 and 2006), Barack Obama (2010 and 2014), and Donald Trump (2018). Thus, the conditional empirical expectation of the number of House seats lost given that the sitting President was Republican is 17.1, and the same conditional expectation for a Democrat sitting President is 31.5. The difference is intriguing. It would be interesting to explain that very substantial difference. The four most prominent outliers in these data are 54 losses in 1994, 63 losses in 2010, 40 losses in 2018, and 8 gain in 2002. Going back, Bill Clinton was not yet a popular President in 1994, perhaps Barack Obama had high negatives among a significant portion of the Americans in 2010, perhaps there was still a rallying-behind-the-President national sentiment in 2002 after 9/11, and as regards

the 40 losses in 2018, we are probably still studying the national perception of Donald Trump's Presidency.

The lag-one correlation is only -0.017. I was surprised to see the lag-two correlation, a whopping -0.847. What explains that?

Contrary to my expectation, I found very little correlation between the number of seats lost by the party in the White House and inflation just before the election. The correlation with inflation was 0.027. What that probably means is that the true correlation is virtually zero and the calculated value is pure noise. Now as for gas prices, I was stunned to see that the correlation with number of seats lost is -0.71. The wrong sign goes completely against common sense. Voters were being influenced by something that looms larger than prices at the pump. As an example, in the 2002 elections, during George W. Bush's presidency, the Republicans actually gained 8 seats, although gas price was the highest in the last 40 years in 2002 (adjusted to 2022 dollars).

A plausible bigger factor explaining this is that on the eve of the 2002 Presidential election, President Bush was sitting at 63% approval rating, and it may have made everything else irrelevant. I also calculated the correlation of number of seats lost with the President's approval rating on the eve of the election. It was -0.84. This one is very high and the negative correlation is in the right direction.

Elections in any country are notoriously difficult to predict, even when polling data are used. (We didn't use polling data here at all. We don't have much at the micro scale at all right now. Also, we can leave that to the professionals who will be doing it.) It does look like predictions at a macro level could be made by using a regression model with unemployment rate, some sort of a quality-of-life index, whether the country is currently involved in a war, health care cost and Presidential approval rating, with an autoregressive error of order two (maybe). That's quite a few variables. So, we may need to use data further back than 1982 to have enough degrees of freedom to estimate the variances.

Very (very!) naively, if we fit a standard linear model of the number of House seats lost by the President's party on just the President's approval rating  $X_1$ , and the unemployment rate  $X_2$ , then we get a least squares fitted line  $y = 89 - 1.6X_1 + 2.55X_2$ , and it being the current data that  $x_1 = 44$  and  $x_2 = 3.9$  (i.e., 44% approval on September 13 and 3.9% unemployment on February 28), the naive predictor forecasts that Democrats will lose 28 seats this November.

Now, let's see what happens on November 8. I will be ready with my biryani, pakoras, gulab jamun and Darjeeling tea.

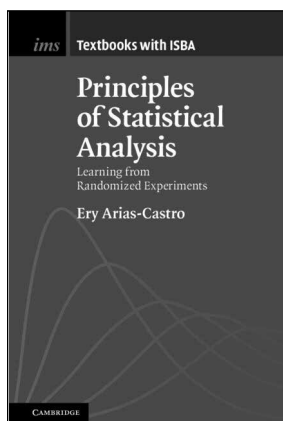


Martin Falbisoner/Wikimedia



*The Institute of Mathematical Statistics presents*

# IMS TEXTBOOKS



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Ery Arias-Castro, University of California, San Diego

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Cambridge University Press, with the Institute of Mathematical Statistics, established the *IMS Monographs* and *IMS Textbooks* series of high-quality books. The series editors are Nancy Reid (Coordinating Editor), Ramon van Handel (Probability), Arnaud Doucet (Algorithms) and John Aston (Statistics).

# COPSS Award 2023: Nominations sought

Please visit <https://community.amstat.org/copss/home> for details of eligibility and nomination requirements for all these awards. Please send nominations (preferably by e-mail in PDF format) to the committee chairs by **December 15, 2022**.

## Presidents' Award

The Presidents' Award is presented annually to a young member of one of the participating societies of COPSS in recognition of outstanding contributions to the statistics profession. It is typically granted to an individual who either (i) has not yet reached his or her 41st birthday during the calendar year of the award, or (ii) will be under age 46 throughout the award calendar year and will have received a terminal statistically-related degree no more than 12 years prior to that year (see COPSS website for more details on eligibility criteria). Nominations must be sent by December 15, 2022, preferably by email in PDF format, to:

**Michael Kosorok**

Chair, COPSS Presidents' Award Committee

Professor, Department of Biostatistics  
University of North Carolina–Chapel Hill  
Email: [kosorok@bios.unc.edu](mailto:kosorok@bios.unc.edu)

## Distinguished Achievement Award and Lectureship

The Distinguished Achievement Award and Lectureship is given yearly to an individual in recognition of outstanding contributions to statistical methods that have had significant impact on scientific investigations. The 2023 award winner will deliver the lecture at the JSM in Toronto, Canada. Nominations must be sent by December 15, 2022, preferably by email in PDF format, to:

**Jianwen Cai**

Chair, COPSS Distinguished Achievement Award and Lectureship Committee  
Professor, Department of Biostatistics  
University of North Carolina–Chapel Hill  
Email: [cai@bios.unc.edu](mailto:cai@bios.unc.edu)

## F.N. David Award and Lectureship

The F.N. David Award and Lectureship are presented biennially (odd-numbered years) to a female statistician who serves as a role model to other women by her contributions to the profession through excellence in research, the leadership of multidisciplinary collaborative groups, statistics education, or service to the professional societies. The 2023 award winner will deliver the F.N. David Lecture at the JSM in Toronto, Canada. Nominations must be sent by December 15, 2022, preferably by email in PDF format, to:

**Kate Crespi**

Chair, COPSS F.N. David Lecture and Award Committee  
Professor, Department of Biostatistics  
UCLA School of Public Health  
Email: [ccrespi@ucla.edu](mailto:ccrespi@ucla.edu)

## George W. Snedecor Award

The George W. Snedecor Award is presented biennially (odd-numbered years) to honor an individual who has been instrumental in the development of statistical theory in biometry and with a noteworthy publication in biometry within three years of the date of the award. Nominations must be sent by December 15, 2022, preferably by email in PDF format, to:

**Sebastien Haneuse**

Chair, COPSS GW Snedecor Award Committee  
Professor, Department of Biostatistics  
Harvard University, T.H. Chan School of Public Health  
Email: [shaneuse@hsph.harvard.edu](mailto:shaneuse@hsph.harvard.edu)

## COPSS Emerging Leader Award

The COPSS Emerging Leader Award is presented to recognize early-career statistical scientists who show evidence of and potential for leadership and who will help shape and strengthen the field. The award is designed both to call attention to the efforts of these individuals and to provide a mechanism for them to share their vision for the field with each other and the statistical community. The award shall be given each year to a maximum of eight persons and will be announced at the JSM in Toronto, Canada. This award, established in 2020, was originally known as the COPSS Leadership Academy. Nominations must be sent by December 15, 2022, preferably by email in PDF format, to:

**David Haziza**

Chair, COPSS Emerging Leader Award Committee  
Professor, Department of Mathematics and Statistics  
University of Ottawa  
Email: [haziza@dms.umontreal.ca](mailto:haziza@dms.umontreal.ca)

*These awards will be presented by COPSS, the Community of Presidents of Statistical Societies at next year's Joint Statistical Meetings in Toronto, August 5–10, 2023.*



# Radu's Ride: Flying Like a Bosstatistician

Contributing Editor Radu Craiu (University of Toronto) writes:

This Summer's spirit was airborne. And by that I don't mean that it went up in smoke, European heatwaves notwithstanding, but rather that it was a summer of freedom—an imponderable feeling that is, alas, most relished when it is seriously threatened. I have no idea about others' use of a shackle-free environment, but my decision was to take to the skies, a place that once upon a time used to be friendly. As in all aspects of life<sup>1</sup>, some statistical terms helped me to, if not navigate various sides of the mess, at least find the right labels for them.

Planning a trip used to start with introspection, inclination, and prediction. Now it is more about others' expectation: what will they want/need from me and how many regulatory hoops will I need to jump through? Travel was always messy and random so that even in BC (Before Covid) times I was considering it similar to a Brownian motion with a drift. Now that we're driftless, the chaos some have experienced in airports this year is no longer surprising. See, I bet you're already feeling better about that checked-in suitcase you optimistically waved goodbye to, unaware of the absorbing state it was about to enter. In response to these black swan stories that seem to multiply like rabbits, I have lasso-ed my packing habits into a carry-on suitcase regardless of the space-time process my itinerary is supposed to follow. If you are curious about the penalty I used, be aware that the details are unpleasant and involve tuning of my lumbar vertebrae and my ability to reach my laces' loose ends.

After the brutal interval censoring our travel plans succumbed to, I was looking forward to lifting my arms in

sweet surrender at the security scanner. For most, airport excitement comes from the challenge of navigating various competing risks, among which I mention the successful journey through security while keeping one's pants on. If you don't want to end up only with your bootstraps, steer clear from mentioning your expertise in jackknife. The security scanners follow a branching process that rhymes with madness, and one cannot avoid the thought that if we were to use the random sampling of airport security for Bayesian computation, we would sample mostly from the prior. To add insult to insult, lately I seem to hold my liquids badly given the intense scrutiny I experience from the terminal authorities. It turns out that the hazard of trouble is proportional to my contempt of authority. When the awaited thumbs up are finally visible, I move along feeling thoroughly cross-validated.

The celebratory post-security sprint to freedom has evolved into more of a change point problem in which COVID-related requirements play whack-a-mole with our dreams. Uncertainty mis-calibration, along with its propagation, is likely the reason some feel they must choose between staying put or developing an ulcer. For me, an unforgettable memory—in the medical sense—is the blessed day when my daughter turned 18 years old above the Atlantic so that the two-shots vaccine regimen she had dutifully followed was no longer sufficient for the country we were hoping to visit.

A regime switch is not only what we would like to see happen politically in various parts of the world, but also what occurs when we go from taking off to holding off departure for a few hours. That's the time when some regression towards the mean is badly needed, but spurious hopes are not helping when immovable is the word of the day. While stranded in the middle of

an airfield, with no food, little water, and a meager trickle of fresh air, I ponder the practical importance of accepting a false hypothesis or using the wrong predictive model, and start to entertain the statistically sacrilegious thought of swapping the strong signal of an empty cockpit for the white noise of a working airplane engine.

Is such a predicament predictable? I think not, although after five consecutive occurrences, one could modify their prior by adding a few pessimistic spikes to their otherwise optimistic slab. Speaking of cake, airplane food is not it. A meal coming from an airplane's bowels is no black swan, although it does belong in the left distribution tail of all things even remotely edible. Since avoiding the stable taste of plastic has become a central tenet of my diet, I usually chose to sample the terminal-bought sandwich and enjoy the stupendous variability of its taste. Canonical trade-offs make room for less obvious ones. For whatever reason—perhaps conscience—flight attendants endorse my food decision by pouring copious amounts of mediocre beverages.

There was a time when from the airport you would head directly to your quarantine place to wait for your test results while hoping that its ROC will not throw you a curve ball. Happily, those times are over and once disembarked one can enjoy, without any additional worries, or luggage, the joys of being elsewhere and with other people.

And so I would like to congratulate all the brave souls who have, against all odds and omens, managed to organize an in-person conference this Summer. The energy and joy I have experienced as a participant to some of these events has transported me back in time to those days when I was learning to walk in the park and making new friends every 10 minutes. You, dear organizers, have given hope and impetus to many, so that hair loss was totally worth it.

<sup>1</sup> See my *Valentine's special from 2021 for a statistical guide to love*.



# Medallion Lecture preview: Hongyu Zhao

Hongyu Zhao received his BS in Probability and Statistics from Peking University in 1990 and PhD in Statistics from UC Berkeley in 1995. He is currently the Ira V. Hiscock Professor of Biostatistics, and Professor of Statistics and Data Science and Professor of Genetics at Yale University.

Hongyu's research interests are the developments and applications of statistical and computational methods in molecular biology, genetics, drug developments, and precision medicine. His current projects include the analysis of biobank samples with medical records, genomics, imaging, and wearable device data, whole exome and whole genome sequencing data, single cell data, genetic risk prediction across populations, eQTL studies, multi-omics data for neurodegenerative, neurodevelopment, and psychiatric disorders, and multi-omics data for different cancers. He has published extensively with methodology papers in leading statistics, bioinformatics, computational biology, and genetics journals, and his collaborative work has appeared in leading scientific journals. Since joining Yale in 1996, Hongyu has trained over 100 doctoral and post-doctoral students.

He was a Co-Editor of *Statistics in Biosciences* (2011–17) and Co-Editor of *JASA Theory and Methods* (2018–20). Hongyu has been the recipient of a number of honors, including the Mortimer Spiegelman Award for a top statistician in health statistics by the American Public Health Association, and the Pao-Lu Hsu Prize by the International Chinese Statistical Association. He is an elected Fellow of the IMS, the American Statistical Association, and the American Association for the Advancement of Sciences.

This Medallion Lecture will be given at the ENAR Spring Meeting in Nashville, March 19–22, 2023. For more details, please see <https://www.enar.org/meetings/spring2023/>



Medallion Lecturer Hongyu Zhao

## Statistical Issues in Genome Wide Association Studies

The past two decades have seen great advances in human genetics with the identifications of hundreds of thousands of genomic regions associated with thousands of traits and diseases through Genome-Wide Association Studies (GWAS) that collect phenotype and genotype data from large cohorts and biobanks. For example, the UK Biobank has over 500,000 participants, and the Million Veteran Program in the US has recruited close to 900,000 veterans. There are rich phenotypes (e.g. thousands of clinical traits, lab test results, imaging data, and wearable device data) and omics data (e.g. genotype data, whole exome sequencing, whole genome sequencing, gene expression, epigenetics, proteomics, and metabolomics data) available from these cohorts. These data present great opportunities for identifying functional genes and variants for different traits and diseases, inferring specific tissues and cell types relevant for a trait, characterizing the genetic architecture of complex diseases, developing disease risk prediction models that capture joint effects of genetic and environmental factors, investigating genetic similarities and differences across groups (e.g. different ancestral populations), and studying causal relationships among diseases and traits.

Despite the rich data collected from GWAS, there are many challenges in their analyses and interpretations due to the low signal noise ratios (i.e. the phenotypic effects of individual variants are relatively weak), dependence among genetic markers, complex

relationships among traits, and the lack of access to individual level data for many studies. In addition, there is the need to incorporate prior knowledge on diseases and pathways, as well as the diverse sources of data generated from international efforts that can facilitate GWAS data analysis. In this presentation, we will highlight methodology developments of many collaborators and students to address these challenges in the past 10 years. We will first introduce GWAS and statistical models that are commonly used to characterize how genetic factors contribute to complex traits. We will then discuss the robustness of these models and their extensions that can help identify tissues and cell types relevant for a specific trait by integrating diverse -omics data. These models have been extended to estimate genetic correlations (both global and local) between different traits and across populations. These models have also been used for disease risk predictions using genetic and other factors. In this presentation, we will focus on the analysis of GWAS summary statistics, which are more easily accessible from GWAS, instead of individual genotype and phenotype data, a typical set up for traditional statistical analysis. The usefulness of the developed statistical methods will be illustrated through their applications to GWAS data on various diseases, including cardiovascular diseases, cancers, neurodegenerative and neurodevelopment disorders, and psychiatric disorders.

# XL-Files: I am not Yo-Yo Ma



Contributing Editor Xiao-Li Meng has been in a case of repeated mistaken identity—a result, perhaps, of people seeing what they hope to see. He cautions against doing the same with your data...

If I am fortunate to have you as a frequent reader of the XL-Files, you might recall my encounter with Yo-Yo Ma on a flight in 2015. (The photo below documents the encounter.) If you ignore the fact that this is a rhetorical question, what would be your estimated probability that I could be mistaken for Yo-Yo Ma *twice in one day*?

It's probably not trivial. There are some resemblances, I gather. We have similar builds, friendly smiles, age cohorts, eyeglasses, and even hair styles (but not necessarily the hair density or sparsity). If you are sufficiently tipsy, you might even think we look like brothers. But unless you are completely inebriated, I doubt it would

be significant enough for you to bet any significant amount on the actual occurrence of the event where I would serve as multiple imputations for Yo-Yo Ma.

But since I asked, of course, the event has happened, and on a most memorable day of my over three-decade journey as a statistician. Pour yourself a glass of anything that relaxes you to indulge my story—I promise that there will be a serious statistical moral, not just a probabilistic musing.

September 10, 2022, was the day for the much delayed in-person induction ceremony by AAAS (the American Academy of Arts and Sciences) for its classes of 2020 and 2021. In the morning an informal gathering for the new members was held at AAAS' headquarter, which happened to be only three blocks away from my shared apartment when I was a graduate student in the late 1980s. Reflecting on the fact that it took more than three decades for me to complete this three-block journey, I decided to catch up, by walking over 30 blocks to the afternoon ceremony at the Kresge Auditorium at MIT. It was a most memorable two miles of walk, not because it was on the Memorial Drive, but because I was in a full COVID-inspired and aspired gear, with a cap, sunglasses, mask, suit and

tie, and dress shoes—finally I had an excuse to get them out of my closet. These are not exactly designed for jogging or long walks, but the sweat they induced served as a good reminder of the hardship of any long journey.

“Are you Mr. ‘Meng?’” As I was busy counting and reflecting on my blocks, an academic-looking gentleman crossed over the Drive, clearly nervous. “Yes?” My curiosity and ego soared concomitantly—could this AAAS thing work so swiftly? “Oh great,” his voice relaxed instantly, “I really want to thank you for your performance last night.” Oh no—it's not the AAAS thing! It's the entertaining opening celebration took place the night before, which featured an interview with Yo-Yo Ma, followed by a performance that requires no adjective, just as Yo-Yo Ma needs no introduction. But how could I embarrass a clearly excited fellow admirer of a greatest musician, especially as distinguishing unfamiliar faces with masks on is particularly challenging? Hoping that he would simply walk away with a fond memory, I offered a NCND (neither-confirm-nor-deny) smile. “Watching your performance was like meeting with Robert X...,” he continued, with a series of compliments amounting to a Turing test for my identity. Alright, there's no way I could NCND my way out of this—the Turing test was too powerful. I had no idea who Robert X was, and indeed I didn't even catch the last name and many other phrases followed.

“I'm sorry, but I am not Yo-Yo Ma.” The moment I uttered the truth, the gentleman was almost on the floor, or rather, street. “Oh my God, I'm so sorry. I just embarrassed myself so much.” That's exactly how I was afraid he might react. He bowed deeply. “I saw you from a distance and thought that this would be my only chance to say thank you in person.” His torso swung

When Yo-Yo Ma [left] met Xiao-Li Meng on a plane (in 2015). See the XL-Files from the Jan/Feb 2016 issue: <https://imstat.org/2015/12/16/xl-files-yo-yo-ma-on-machine-or-massive-learning/>





Yo-Yo Ma [left] and his non-doppelganger Seiji Ozawa [center], with James Taylor, at a U.S. State Department dinner in 2015. Photo: Margot Schulman.

asynchronously with his head, as he tried to explain the situation. I felt really bad for putting him in such an awkward position, literally and figuratively. I tried to interrupt his apology: “Well, you see that the name Ma and Meng could sound similar, so I didn’t catch the difference.” The moment I said it, I realized that I may have just made the situation worse, since I was implicitly blaming him for not pronouncing the name clearly.

Fortunately, Yo-Yo Ma came to the rescue. That is, a story told by Yo-Yo Ma at the opening celebration became a face-saver for both of us—we both laughed hard once I brought it up, since our story was almost like a rerun of Yo-Yo Ma’s, yet with an amusing twist.

Toward the end of the interview the night before, Yo-Yo Ma was asked what it is like to be a household name or face in his daily life. With a typical IGYA (I’m-glad-you-asked) smile, Yo-Yo Ma recalled an encounter in a Whole Foods market near where he lives. As he was picking up groceries just like any other customer, a lady approached him with an inquiry that is mostly reserved for celebrities: “Are you who I think you are?” “Yes?” A non-deny

smile was all it took to send the satisfied lady away. But just as Yo-Yo Ma turned around to continue being an ordinary citizen, he overheard the lady whispering to her husband: “That’s Seiji Ozawa!” The audience almost brought down the hall.

Surely if Yo-Yo Ma could be mistaken for [the legendary classical conductor] Seiji Ozawa, who is 20 years his senior and with a very different hair style, then mistaking Meng for Ma should be easily excused or at least expected. Indeed, my hypothesis was further supported by another encounter, during the reception after the induction ceremony. I was chatting with another new member, and this time without a cap or sunglass (but still with a mask). A couple walked over excitedly with the man extending his arm before even getting close to me, “Oh, I was hoping to thank ...”, but before he could complete the sentence, the woman apparently had better eyesight and noticed my name tag, “Oh no, *it’s not him!*” she yelled at the man. Seeing another awkward posture as the man tried to change the direction of his hand while searching for words to complete his sentence, I offered a playful smile (under the mask), “I think I know who you think I am.”

“Never mind. I am such a schm...” he muttered, apparently finding the right words as he walked away hastily.

I was clearly amused by the double occurrence, so was Yo-Yo Ma, who wrote in a replying email, “I had a good laugh hearing about further identity mix-ups, especially after my wife remarked on your professional expertise in figuring out the probabilities! [...] I will contact you immediately after someone thinks I am you. We’ll keep this going...”

Whereas I’d be extremely delighted if a musician could ever be mistaken as a statistician, I’m deeply distressed by the thought that such mix-ups occur far more often than we realize or want to admit. Both gentlemen acted prematurely on their hastily formed pattern recognitions because of their strong desire to seize an opportunity for a particular (well-intended) outcome—to thank Yo-Yo Ma in person. This is not qualitatively different from many goal-oriented or driven data analyses, where the investigators rush to their conclusions because the suggestive evidence seem to fulfill what they hope to see.

There is one key difference, however. Whereas a mistaken statistician can declare, “I am not Yo-Yo Ma,” a misleading statistical result could never proclaim, “I am not the right one.” It is up to all the stat-struck investigators to separate the real stat from all the lookalikes. It’s a very daunting task in general, which has given Statistics the status as a discipline, not a fanfare. Indeed, the fact that these seemingly highly improbable mistaken identities could happen this often should serve as a good reminder of the vulnerability of human judgments to passion or desire.

The moral of all these stories, then, is that it is vital to be deliberately *disinterested* (not *uninterested*) in any statistical pursuits, and especially those that interest us most.

# Apply for a 2023 Travel Award

## Travel Awards for Grad Students and New Researchers

Applications are open for our two travel awards. The **IMS Hannan Graduate Student Travel Award** funds travel and registration to attend (and possibly present a paper/poster at) an IMS sponsored or co-sponsored meeting. This award is for graduate students (Masters or PhD) in statistics or probability. See <https://www.imstat.org/ims-awards/ims-hannan-graduate-student-travel-award/> for more information.

If you are a New Researcher (awarded your PhD in 2017–22), you should apply for the **IMS New Researcher Travel Award** to fund your travel, and possibly other expenses, to present a paper or a poster at an IMS sponsored or co-sponsored meeting. See <https://www.imstat.org/ims-awards/ims-new-researcher-travel-award/> for more on this award.

Applicants for either of these travel awards must be members of IMS, though joining as you apply is allowed (remember that **student membership is free and new graduate membership is discounted!**).

The deadline for both is **February 1, 2023**.



## ...or nominate someone for an IMS Award

### Early-Career Awards

Peter Hall (1951–2016) played a significant role throughout his professional career in mentoring young colleagues at work and through professional society activities. With funds donated by his friends and family, the IMS created the **Peter Gavin Hall Early Career Prize**: <https://www.imstat.org/ims-awards/peter-gavin-hall-ims-early-career-prize/>. Its purpose is to recognize early-career research accomplishments and research promise in statistics, broadly construed. (An early-career researcher eligible for the 2023 prize will have received their doctoral degree in any of the years 2015–2022. The IMS gives the award committee latitude to consider nominees with



Peter Hall

extenuating circumstances that may have delayed professional achievements.) Nominations may be made by any member of the IMS, and nominees do not need to be IMS members. The deadline is **December 1, 2022**. The award consists of a plaque, a citation, and a cash honorarium.

Richard Tweedie (1947–2001) played a significant role throughout his career as a mentor. The **Tweedie New Researcher Award**, created in his memory, provides funds for travel to present the **Tweedie New Researcher Invited Lecture** at the IMS New Researchers Conference.

Richard Tweedie

Nominations should be received by **December 1, 2022**; see the instructions at <https://imstat.org/ims-awards/tweedie-new-researcher-award/>

### IMS Fellowship

Nominate a member for **IMS Fellowship** whose research in statistics or probability, or leadership in our communities, is of exceptionally high quality. Deadline **January 31, 2023**: <https://imstat.org/honored-ims-fellows/nominations-for-ims-fellow/>

### Harry C. Carver Award

Nominations are invited for the **Carver Medal**,

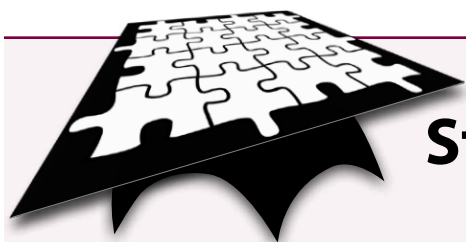
created by the IMS in honor of Harry C. Carver, for exceptional service specifically to the IMS. Deadline



IMS Founder Harry Carver

**February 1, 2023**: <https://www.imstat.org/ims-awards/harry-c-carver-medal/>.





## Student Puzzle Corner 41

Student Puzzle Editor Anirban DasGupta says, "This time we pose **two** standard, but fun, problems in traditional statistics and probability. You are most welcome to send answers to one or both, we will still mention your name. The first is a problem on discovery. I hope you have some fun thinking about it. The second involves randomizing the number of total objects in a multinomial experiment."

### Puzzle 1:

Suppose  $X \sim U[0, f(\theta)]$  for some suitable function  $f$ , and  $\theta$  is a real parameter taking values in the entire real line. Discover a prior distribution on  $\theta$  and a function  $f$  such that the posterior mean of  $\theta$  given  $X = x$  is identically equal to zero for all  $x$ .

### Puzzle 2:

*(This problem can be solved analytically. If you are unable to find an analytic solution, send us a careful simulation-based answer. If the simulation-based answer is satisfactory, we will still mention your name.)*

$N$  balls are distributed, one by one, completely at random, independently into one of 300 urns, where  $N$  has a Poisson distribution with mean 1000. Find explicitly the most likely number of urns that will remain empty.

Student members of IMS are invited to submit solutions to [bulletin@imstat.org](mailto:bulletin@imstat.org) (with subject "Student Puzzle Corner"). The names of student members who submit correct solutions to either or both of these puzzles, and the answer, will be published in the issue following the deadline.

The Puzzle Editor is Anirban DasGupta. His decision is final.

**Deadline: November 1, 2022**

## Solution to Puzzle 40

### A reminder of the puzzle:

Your friend is thinking of a two-digit positive integer  $N$  consisting of two distinct nonzero digits. The friend won't tell you what  $N$  is, but will give truthful answers to two yes/no questions.

You ask your friend, "Is it a prime number?"

Then, you ask, "If you reverse the digits of your number, is it still a prime number?"

You have a uniform prior distribution on  $N$ . Find explicitly the posterior median of  $N$  in the four cases when your friend gives the answers "Yes–Yes," "Yes–No," "No–Yes," and "No–No" to your two questions, respectively.

Do you prefer the posterior median or the posterior mean as your report in this problem, and why?

### Problem Corner Editor Anirban DasGupta explains the previous puzzle:

The posterior distribution is uniform on the support  $\mathcal{S}$ , where  $\mathcal{S}$  depends on whether the responses to the two questions were Yes–Yes (YY), Yes–No (YN), No–Yes (NY) or No–No (NN).

When the responses are YY,  $\mathcal{S} = \{11, 13, 17, 31, 37, 71, 73, 79, 97\}$ .

The median of a CDF  $F$  being  $\inf\{x : F(x) \geq \frac{1}{2}\}$ , in this case the posterior median is 37.

When the responses are YN,  $\mathcal{S} = \{19, 23, 29, 41, 43, 47, 53, 59, 61, 67, 83, 89\}$ . In this case the posterior median is 47.

When the responses are NY,  $\mathcal{S} = \{14, 16, 32, 34, 35, 38, 74, 76, 91, 92, 95, 98\}$ , and the posterior median is 38.

In the case that the responses are NN, the posterior median is 57.

The unknown number being an integer, the posterior median is easier to interpret as it is by definition an integer, while the posterior mean will usually not be an integer.

## Recent papers

### *Annals of Statistics*: Vol. 50, No. 4, August 2022

The *Annals of Statistics* aims to publish research papers of the highest quality reflecting the many facets of contemporary statistics. Primary emphasis is placed on importance and originality. The Co-Editors are Enno Mammen and Lan Wang. Access papers at <https://projecteuclid.org/journals/annals-of-statistics/>

Convergence of de Finetti's mixing measure in latent structure models for observed exchangeable sequences . . . . .	YUN WEI AND XUANLONG NGUYEN 1859
Detecting multiple replicating signals using adaptive filtering procedures . . . . .	JINGSHU WANG, LIN GUI, WEIJIE J. SU, CHIARA SABATTI AND ART B. OWEN 1890
Optimal signal detection in some spiked random matrix models: Likelihood ratio tests and linear spectral statistics . . . . .	DEBAPRATIM BANERJEE AND ZONGMING MA 1910
On universally consistent and fully distribution-free rank tests of vector independence . . . . .	HONGJIAN SHI, MARC HALLIN, MATHIAS DRTON AND FANG HAN 1933
Limit theorems for distributions invariant under groups of transformations . . . . .	MORGANE AUSTERN AND PETER ORBANZ 1960
Distributed adaptive Gaussian mean estimation with unknown variance: Interactive protocol helps adaptation . . . . .	T. TONY CAI AND HONGJI WEI 1992
Asymptotic accuracy of the saddlepoint approximation for maximum likelihood estimation . . . . .	JESSE GOODMAN 2021
Generalization error bounds of dynamic treatment regimes in penalized regression-based learning . . . . .	EUN JEONG OH, MIN QIAN AND YING KUEN CHEUNG 2047
A CLT for second difference estimators with an application to volatility and intensity . . . . .	EMIL A. STOLTENBERG, PER A. MYKLAND AND LAN ZHANG 2072
Sharp optimal recovery in the two component Gaussian mixture model . . . . .	MOHAMED NDAOUD 2096
Precise statistical analysis of classification accuracies for adversarial training . . . . .	ADEL JAVANMARD AND MAHDI SOLTANOLKOTABI 2127
Exact minimax risk for linear least squares, and the lower tail of sample covariance matrices . . . . .	JAOUAD MOURTADA 2157
Stochastic continuum-armed bandits with additive models: Minimax regrets and adaptive algorithm . . . . .	T. TONY CAI AND HONGMING PU 2179
Asymptotic independence of spiked eigenvalues and linear spectral statistics for large sample covariance matrices . . . . .	ZHIXIANG ZHANG, SHURONG ZHENG, GUANGMING PAN AND PING-SHOU ZHONG 2205
Learning mixtures of permutations: Groups of pairwise comparisons and combinatorial method of moments . . . . .	CHENG MAO AND YIHONG WU 2231
Generalized resilience and robust statistics . . . . .	BANGHUA ZHU, JIANTAO JIAO AND JACOB STEINHARDT 2256
Nonregular and minimax estimation of individualized thresholds in high dimension with binary responses . . . . .	HUIJIE FENG, YANG NING AND JIWEI ZHAO 2284
On the robustness of minimum norm interpolators and regularized empirical risk minimizers . . . . .	GEOFFREY CHINOT, MATTHIAS LÖFFLER AND SARA VAN DE GEER 2306
Random graph asymptotics for treatment effect estimation under network interference . . . . .	SHUANGNING LI AND STEFAN WAGER 2334
An $\ell_p$ theory of PCA and spectral clustering . . . . .	EMMANUEL ABBE, JIANQING FAN AND KAIZHENG WANG 2359
Estimation of smooth functionals in high-dimensional models: Bootstrap chains and Gaussian approximation . . . . .	VLADIMIR KOLTCHINSKII 2386
A minimax framework for quantifying risk-fairness trade-off in regression . . . . .	EVGENII CHZHEN AND NICOLAS SCHREUDER 2416
Consistency of invariance-based randomization tests . . . . .	EDGAR DOBRIBAN 2443
<b>Erratum:</b> Asymptotic genealogies of interacting particle systems with an application to sequential Monte Carlo . . . . .	JERE KOSKELA, PAUL JENKINS, ADAM JOHANSEN AND DARIO SPANÒ 2467

### *Annals of Applied Statistics*: Vol. 16, No. 4, December 2022

Statistical research spans an enormous range from direct subject-matter collaborations to pure mathematical theory. The *Annals of Applied Statistics* is aimed at papers in the applied half of this range. Our goal is to provide a timely and unified forum for all areas of applied statistics. The Editor in Chief is Ji Zhu. Access papers at <https://projecteuclid.org/journals/annals-of-applied-statistics/>

A Bayesian precision medicine framework for calibrating individualized therapeutic indices in cancer . . . . .	ABHISEK SAHA, MIN JIN HA, SATWIK ACHARYYA AND VEERABHADRAN BALADANDAYUTHAPANI 2055
Semiparametric Bayesian forecasting of SpatioTemporal earthquake occurrences . . . . .	GORDON J. ROSS AND ALEKSANDAR A. KOLEV 2083
Estimating the stillbirth rate for 195 countries using a Bayesian sparse regression model with temporal smoothing . . . . .	ZHENGFAN WANG, MIRANDA J. FIX, LUCIA HUG, ANU MISHRA, DANZHEN YOU, HANNAH BLENCOWE, JON WAKEFIELD AND LEONTINE ALKEMA 2101

Continues on page 19

# Recent papers continued

*Annals of Applied Statistics*: Vol. 16, No. 4, December 2022

Functional random effects modeling of brain shape and connectivity . . . . .	EARDI LILA AND JOHN A. D. ASTON 2122
Hierarchical resampling for bagging in multistudy prediction with applications to human neurochemical sensing . . . . .	GABRIEL LOEWINGER, PRASAD PATIL, KENNETH T. KISHIDA AND GIOVANNI PARMIGIANI 2145
Network differential connectivity analysis . . . . .	SEN ZHAO AND ALI SHOJAIE 2166
Estimating heterogeneous gene regulatory networks from zero-inflated single-cell expression data . . . . .	QIUYU WU AND XIANGYU LUO 2183
Accounting for survey design in Bayesian disaggregation of survey-based areal estimates of proportions: An application to the American Community Survey . . . . .	MARCO H. BENEDETTI, VERONICA J. BERROCAL AND RODERICK J. LITTLE 2201
Bayesian multivariate sparse functional principal components analysis with application to longitudinal microbiome multiomics data . . . . .	LINGJING JIANG, CHRIS ELROD, JANE J. KIM, AUSTIN D. SWAFFORD, ROB KNIGHT AND WESLEY K. THOMPSON 2231
Data-adaptive efficient estimation strategies for biomarker studies embedded in randomized trials. . . . .	WEI ZHANG, ZHIWEI ZHANG, JAMES F. TROENDLE AND AIYI LIU 2250
An omnibus test for detection of subgroup treatment effects via data partitioning . . . . .	YIFEI SUN, XUMING HE AND JIANHUA HU 2266
Assessing treatment effect through compliance score in randomized trials with noncompliance. . . . .	ZONGHUI HU, ZHIWEI ZHANG AND DEAN FOLLMANN 2279
Spatiotemporal satellite data imputation using sparse functional data analysis . . . . .	WEICHENG ZHU, ZHENGYUAN ZHU AND XIONGTAO DAI 2291
Multilevel time-series models for small area estimation at different frequencies and domain levels. . . . .	HARM JAN BOONSTRA AND JAN VAN DEN BRAKEL 2314
How many refugees and migrants died trying to reach Europe? Joint population size and total estimation. . . . .	ALESSIO FARCOMENI 2339
Full Bayesian inference in hidden Markov models of plant growth. . . . .	GAUTIER VIAUD, YUTING CHEN AND PAUL-HENRY COURNÈDE 2352
Extended stochastic block models with application to criminal networks. . . . .	SIRIO LEGRAMANTI, TOMMASO RIGON, DANIELE DURANTE AND DAVID B. DUNSON 2369
Two-sample tests for multivariate repeated measurements of histogram objects with applications to wearable device data. . . . .	JINGRU ZHANG, KATHLEEN R. MERIKANGAS, HONGZHE LI AND HAOCHANG SHOU 2396
Parsimonious Bayesian factor analysis for modelling latent structures in spectroscopy data . . . . .	ALESSANDRO CASA, TOM F. O'CALLAGHAN AND THOMAS BRENDAN MURPHY 2417
Phylogenetically informed Bayesian truncated copula graphical models for microbial association networks . . . . .	HEE CHEOL CHUNG, IRINA GAYNANOVA AND YANG NI 2437
Causal inference for the effect of mobility on COVID-19 deaths. . . . .	MATTEO BONVINI, EDWARD H. KENNEDY, VALERIE VENTURA AND LARRY WASSERMAN 2458
Bayesian hierarchical random-effects meta-analysis and design of phase I clinical trials. . . . .	RUITAO LIN, HAOLUN SHI, GUOSHENG YIN, PETER F. THALL, YING YUAN AND CHRISTOPHER R. FLOWERS 2481
Estimating functional parameters for understanding the impact of weather and government interventions on COVID-19 outbreak. . . . .	CHIH-LI SUNG 2505
Clustering and forecasting multiple functional time series . . . . .	CHEN TANG, HAN LIN SHANG AND YANRONG YANG 2523
Semi-supervised nonparametric Bayesian modelling of spatial proteomics. . . . .	OLIVER M. CROOK, KATHRYN S. LILLEY, LAURENT GATTO AND PAUL D. W. KIRK 2554
Bayesian data synthesis and the utility-risk trade-off for mixed epidemiological data. . . . .	JOSEPH FELDMAN AND DANIEL R. KOWAL 2577
Hierarchical Bayesian modeling of ocean heat content and its uncertainty . . . . .	SAMUEL BAUGH AND KAREN MCKINNON 2603
Bayesian inference for brain activity from functional magnetic resonance imaging collected at two spatial resolutions. . . . .	ANDREW S. WHITEMAN, ANDREAS J. BARTSCH, JIAN KANG AND TIMOTHY D. JOHNSON 2626
Testing for differential abundance in compositional counts data, with application to microbiome studies . . . . .	BARAK BRILL, AMNON AMIR AND RUTH HELLER 2648
Mapping interstellar dust with Gaussian processes. . . . .	ANDREW C. MILLER, LAUREN ANDERSON, BORIS LEISTEDT, JOHN P. CUNNINGHAM, DAVID W. HOGG AND DAVID M. BLEI 2672
Modelling extremes of spatial aggregates of precipitation using conditional methods . . . . .	JORDAN RICHARDS, JONATHAN A. TAWN AND SIMON BROWN 2693
A spatial causal analysis of wildland fire-contributed PM <sub>2.5</sub> using numerical model output. . . . .	ALEXANDRA LARSEN, SHU YANG, BRIAN J. REICH AND ANA G. RAPPOLD 2714
Dimensions, power and factors in an observational study of behavioral problems after physical abuse of children . . . . .	TING YE, DYLAN S. SMALL AND PAUL R. ROSENBAUM 2732
Scalar on network regression via boosting . . . . .	EMILY L. MORRIS, KEVIN HE AND JIAN KANG 2755
Multiscale spectral modelling for nonstationary time series within an ordered multiple-trial experiment . . . . .	JONATHAN EMBLETON, MARINA I. KNIGHT AND HERNANDO OMBAO 2774
Bayesian bi-clustering methods with applications in computational biology . . . . .	HAN YAN, JIEXING WU, YANG LI AND JUN S. LIU 2804

# IMS meetings around the world

## Joint Statistical Meetings

### 2023 Joint Statistical Meetings

August 5–10, 2023 in Toronto

[w https://www2.amstat.org/meetings/jsm/2023/](https://www2.amstat.org/meetings/jsm/2023/)

The IMS Program Chair is Huixia Judy Wang, George Washington University.

### JSM dates for 2024–2026

**JSM 2024**  
August 3–8, 2024  
Portland, Oregon,  
USA

**IMS Annual Meeting  
@ JSM 2025**  
August 2–7, 2025  
Nashville, TN, USA

**JSM 2026**  
August 1–6, 2026  
Boston, MA, USA



### Seminar on Stochastic Processes (SSP2023) March 8–11, 2023

University of Arizona, Tucson

[w https://ssp2023.math.arizona.edu/home](https://ssp2023.math.arizona.edu/home)

SSP is a series of annual conferences devoted to stochastic analysis, Markov processes, and other topics of current interest in probability theory. Tutorial lectures by Gérard Ben Arous on March 8. Invited speakers: Patricia Alonso Ruiz, François Delarue (Kai Lai Chung Lecture), Jian Ding (Medallion), Patrícia Gonçalves, Philippe Sosoe. Registration open now. Graduate students and postdoctoral fellows are especially encouraged to register and apply for financial support.

### 43rd Conference on Stochastic Processes and their Applications July 24–28, 2023 in Lisbon, Portugal

[w https://www.spa2023.org/](https://www.spa2023.org/)

Featuring talks by Louigi Addario-Berry (Schramm lecture), Riddhipratim Basu, René Carmona (Doob lecture), Jean-Dominique Deuschel, Massimiliano Gubinelli (Medallion lecture), Martina Hofmanova, Richard Kenyon (Medallion lecture), Gesine Reinert, Makiko Sasada, Sylvia Serfaty (Medallion lecture), and Horng-Tzer Yau (Lévy lecture). Doeblin & Itô prize lecturers to be announced.

### Statistical Foundations of Data Science and their Applications: NEW A conference in celebration of Jianqing Fan's 60th birthday May 8–10, 2023

Princeton University, New Jersey, USA

[w http://fan60.princeton.edu/](http://fan60.princeton.edu/)

The conference will bring together collaborators and leading researchers in statistics and data science. The conference will provide an excellent forum for scientific communications and promote collaborations among researchers in statistics and data science. The program covers a wide range of topics presenting recent developments and the state of the art in a variety of modern research topics on statistics and data science as well as their applications.

### Southeastern Probability Conference (two in 2023) May 15–16, 2023 at Duke University, USA, and August 14–15, 2023 at University of Virginia in Charlottesville, USA

[w https://services.math.duke.edu/~rtd/](https://services.math.duke.edu/~rtd/)

The organizers are Juraj Foldes, Christian Gromoll, and Tai Melcher. Graduate students and postdocs will have a chance to apply for \$500 grants to partially support the cost of their attendance. Details forthcoming.



**2023 ENAR/IMS Spring Meeting**  
March 19–22, 2023  
Nashville, TN, USA

[w https://enar.org/meetings/future.cfm](https://enar.org/meetings/future.cfm)  
Featuring an IMS Medallion Lecture by Hongyu Zhao, Yale School of Public Health. See preview on page 13 and article on next page.

**2024 ENAR/IMS  
Spring Meeting**  
March 10–13, 2024  
Baltimore, MD, USA  
[w https://enar.org/meetings/future.cfm](https://enar.org/meetings/future.cfm)

## At a glance:

forthcoming  
IMS Annual  
Meeting and  
JSM dates

## 2023

IMS Annual  
Meeting @ JSM:  
Toronto, August  
5–10, 2023

## 2024

IMS Annual  
Meeting/  
11th World  
Congress:  
Bochum, Germany,  
August 12–16,  
2024

JSM: Portland,  
OR, August 3–8,  
2024

## 2025

IMS Annual  
Meeting @ JSM:  
Nashville, TN,  
USA, August 2–7,  
2025

## 2026

IMS Annual  
Meeting: TBD

JSM: Boston, MA,  
August 1–6, 2026





## 2023 ENAR/IMS Spring Meeting

**March 19–22, 2023. Nashville, TN, USA**

**w** <https://enar.org/meetings/spring2023/>

**Leslie McClure is the ENAR President in 2023. On the meeting webpage she writes an enthusiastic welcome:** I am so excited to welcome you to the ENAR 2023 Spring Meeting at the JW Marriott in Nashville, TN. I'm especially excited to welcome our first-time attendees, and welcome back those who have not been back to in-person ENAR since 2019! The four-day meeting, March 19–22, 2023, will have something to offer for everyone, including students, researchers, and practitioners, from across all sectors. Attendees can learn about the latest developments in statistical methods, software, and applications through the scientific and educational programs. The ENAR Spring Meeting is also a great time to build your professional network and meet new collaborators, to catch up with old friends and to make new ones. The meeting offers numerous opportunities for professional development and networking, such as tutorials and roundtables, contributed and invited sessions, the meeting's career placement services, and breaks and mixers.

### Scientific Program

The diverse invited program covers a wide range of topics in biostatistics, including causal inference, clinical trial design, Bayesian analysis and inference, precision medicine, medical imaging, diagnostics and wearable device studies, microbiome and omics studies, and machine learning. Other sessions will cover career development, collaborative research, and a look back at the history of our field as IBS celebrates its 75th anniversary. The **IMS Program Chair, Xuan Bi** (University of Minnesota), has put together complementary sessions on statistical genetics and genomics, machine learning methods in biomedical data science, causal inference, brain connectivity and brain imaging genomics, clinical trial design, as well as emerging topics such as distributed health data analysis, data privacy, individualization, and mobilization. After a brief hiatus, the **IMS Medallion Lecture** has returned! Professor **Hongyu Zhao** from Yale School of Public Health will speak about statistical issues in genome wide association studies. [See preview on page 13.] The **ENAR 2023 Presidential Invited Address** will be delivered by **Sally Morton**. Dr. Morton is Executive Vice President of Knowledge Enterprise at Arizona State University, where she is also a Professor in the College of Health Solutions and the School of Mathematical and Statistical Sciences.

### Educational Program

Our educational program provides many opportunities for ongoing learning through a diverse set of short courses, tutorials, and roundtables. Short course topics include methods for causal inference, clinical trials,

*IMS Program Chair, Xuan Bi, has organized an IMS Medallion Lecture by Professor Hongyu Zhao from Yale School of Public Health. See preview on page 13.*

Bayesian methods, programming in Julia; tutorial topics include interacting with the media, transcriptome data methods, use of smoothing and splines, and service on Data Monitoring Committees. Roundtable luncheons provide a more focused discussion with distinguished statisticians in an informal setting with a small number of attendees. Some of the topics offered this year include grant writing, use of causal inference in collaborative research, nominating for and being nominated for awards, and building and maintaining a research group.

### Additional Meeting Activities

On March 20, there is a **Fostering Diversity in Biostatistics Workshop**, organized by Miguel Marino (Oregon Health and Science University) and Danisha Baker (Microsoft). Through panel discussions, graduate students and professionals in academia, government, and industry share their experiences and discuss mentoring, recruiting, and retaining students in related graduate programs. Register early: <https://www.enar.org/meetings/FosteringDiversity/>

Students, recent graduates, and other young professionals should plan to attend Monday's **networking mixer** and Tuesday's **networking lunch** events, both organized by the Council for Emerging and New Statisticians (CENS). This is a great opportunity to meet new people, learn about CENS and become more engaged with ENAR.

### YoungStatS Webinar: Recent challenges in model specification testing based on different data structures NEW

**November 9, 2022. Online, via Zoom**  
**w** <https://youngstats.github.io/post/2022/09/29/recent-challenges-in-model-specification-testing-based-on-different-data-structures/>

Model specification testing is one of the essential methodological tasks in statistics. Recently, with the development of different data structures, envisioning concepts from classical data setups to other environments becomes very important. The webinar is presented by some leading young names in statistics, who are based in Europe and South Africa.

# More IMS meetings

## 2022 IMS International Conference on Statistics and Data Science (ICSIDS)

UPDATED

December 13–16, 2022 in Florence, Italy

[w https://sites.google.com/view/icsids2022](https://sites.google.com/view/icsids2022)

Registration is open now for the inaugural 2022 IMS International Conference on Statistics and Data Science (ICSIDS). Discounted rates for IMS members: regular registration \$630, or for student/retired/developing country IMS members \$350. Late registration from November 1.

<https://sites.google.com/view/icsids2022/registration>

Due to the unexpected large number of responses and space constraints of the conference venue, *all speakers (invited or contributed) and poster presenters are required to register by November 15, 2022 in order to be on the program.*

The objective of ICSIDS is to bring together researchers in statistics and data science from academia, industry and government in a stimulating setting to exchange ideas on the developments in modern statistics, machine learning, and broadly defined theory, methods and applications in data science. The conference will consist of plenary sessions, and about 50 invited, contributed and poster sessions. **Young researchers are particularly encouraged to participate**, with a portion of the invited sessions designated for them. Plenary speakers: Emmanuel Candès, Guido Imbens, Susan Murphy, Sylvia Richardson.

## Asia-Pacific Seminar in Probability and Statistics Ongoing and online

[w https://sites.google.com/view/apsp/home](https://sites.google.com/view/apsp/home)

The Asia-Pacific Seminar in Probability and Statistics (APSPS) is a monthly online seminar, broadcast on a mid-month Wednesday via Zoom. The seminar series was created as a permanent forum for good research in the field. Topics include: probabilistic models for natural phenomena, stochastic processes and statistical inference, statistical problems in high-dimensional spaces, asymptotic methods, statistical theory of diversity. The organizers—Sanjay Chaudhuri, Mark Holmes, Estate Khmaladze (chair), Krishanu Maulik, Spiro Penev, Masanobu Taniguchi, Lijiang Yang, and Nakahiro Yoshida—seek an emphasis on novelty, beauty, and clarity. Presentations are intended to be accessible to good postgraduate students in probability and mathematical statistics. If you are interested in receiving email announcements about the next speakers, send an email to any of the Board members listed above.

## BNP13: the 13th Conference on Bayesian Nonparametrics October 24–28, 2022 in Puerto Varas, Chile

[w https://midas.mat.uc.cl/bnp13/](https://midas.mat.uc.cl/bnp13/)

This meeting aims to gather in Chile leading experts in this already consolidated and rapidly expanding field for a full week of plenary, invited, contributed and poster talks, reflecting the many and varied aspects of the theoretical, methodological, and applied work in the discipline. We also expect to attract many young researchers to the event, especially those residing in South America and in Chile. The event features three keynote lectures (free topic), invited and contributed sessions, spanning all the wide spectrum of theory, methodology and applications of Bayesian methods from the nonparametric viewpoint: asymptotics, advanced computation, robustness, inference in high-dimensional settings, deep learning, machine learning, uncertainty quantification, clustering and applications.

## IMS annual meeting Bernoulli–IMS 11th World Congress in Probability and Statistics August 12–16, 2024 Ruhr-University Bochum, Germany

[w TBC](#)

The Institute of Mathematical Statistics Annual Meeting will be held at the 11th World Congress.

## IMS–APRM in Melbourne, Australia POSTPONED TO JANUARY 2024

The sixth Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS–APRM) was scheduled to take place in Melbourne, Australia in January 2021. Due to COVID-19 and travel restrictions, the conference has been **postponed until January 2024**. Exact dates to be confirmed.



## One World ABC Seminar: Ongoing and online

[w https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar](https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar)

The One World Approximate Bayesian Computation (ABC) Seminars are **monthly** seminars that take place via Zoom on Thursdays, typically 9.30am or 1.30pm [UK time]. Register to receive the webinar link via email. The organizers welcome proposals for future talks. This webinar is part of the larger One World seminar initiative [see below].

## One World Probability Seminar (OWPS): Ongoing and online

[w https://www.owprobability.org/one-world-probability-seminar/](https://www.owprobability.org/one-world-probability-seminar/) Thursdays, 14:00 UTC/GMT [resuming in September]. Please subscribe to the mailing list for updates about the upcoming seminars and other events: <https://www.owprobability.org/mailling-list>

# Other meetings and events around the world

## Conference on Advances in Data Science: Theory, Methods and Computation

October 21–22, 2022

Hilton College Station & Conference Center, TX, USA

<https://iamcs.tamu.edu/conference-on-advances-in-data-science-theory-methods-and-computation/>

Keynote speakers:

Edward I. George, University of Pennsylvania

Peter Hoff, Duke University

James Scott, University of Texas at Austin

Ryan Tibshirani, Carnegie Mellon University

Moshe Vardi, Rice University

**Technical posters presenting innovative and original research are solicited.** In general, we are interested in posters related to all areas of data science that validate important research finds or showcase realistic applications that impact the data-science community and community partners. The Joe Newton poster awards will be selected by an awards committee and given a certificate with a cash prize: 1st place \$2,000, 2nd place \$1,000, 3rd place \$500.

## 2023 Zambia Conference: Better Lives for 2030

April 4–6, 2023 in Livingstone, Zambia

[www.zamstats.gov.zm/2023-iaos-isi-about-conference/](http://www.zamstats.gov.zm/2023-iaos-isi-about-conference/)

The 2023 Zambia Conference, held in Livingstone, Zambia from April 4–6, 2023, is the 17th International Association for Official Statistics Conference and 3rd International Statistical Institute Regional Statistics Conference. This is an in-person event only. It is jointly organised by IAOS, ISI, and the Zambia Statistics Agency (ZamStats). The conference is being held after the rainy season, and the mighty Victoria Falls, one of the Seven Wonders of the World, should be a magnificent sight to behold.

## CSP2023: Conference on Statistical Practice

February 2–4, 2023 in San Francisco, USA

<https://ww2.amstat.org/meetings/csp/2023/index.cfm>

The goal of the conference is to provide participants with opportunities to learn new statistical methodologies and best practices in statistical analysis, design, consulting, and programming. The conference is designed to help applied statisticians improve their ability to consult with and aid customers and organizations solve real-world problems.

## Symposium on Data Science and Statistics

May 23–26, 2023

St. Louis, Missouri, USA

<https://ww2.amstat.org/meetings/sdss/2023/index.cfm>

The American Statistical Association invites you to join the sixth annual Symposium on Data Science and Statistics in St. Louis, Missouri, May 23–26, 2023. SDSS provides a unique opportunity for data scientists, computer scientists, and statisticians to come together and exchange ideas. The theme is *Beyond Big Data: Inquire, Investigate, Implement, Innovate*.

The SDSS 2023 Program Committee is soliciting submissions for both refereed (due December 15, 2022) and lightning (due March 10, 2023) presentations. All refereed and lightning submissions should focus on one of the following six tracks:

- Computational Statistics
- Data Visualization
- Education
- Machine Learning
- Practice and Applications
- Software & Data Science Technologies

See website for submission instructions.

## ICIAM2023: 10th International Congress on Industrial and Applied Mathematics

August 20–25, 2023

Waseda University, Tokyo, Japan

<https://iciam2023.org/>

The International Congress on Industrial and Applied Mathematics (ICIAM) is an international congress in the field of applied mathematics held every four years under the auspices of the International Council for Industrial and Applied Mathematics. The next event to be held will be August 20–25, 2023 in Tokyo, Japan.

The 2023 ICIAM prizes will be awarded at the Opening Ceremony of the International Congress for Industrial and Applied Mathematics, ICIAM 2023, to be held in Tokyo (Japan), on August 20–25, 2023. The winners of these ICIAM prizes are:

- Collatz Prize: Maria Colombo (EPFL Lausanne, Switzerland)
- Lagrange Prize: Alfio Quarteroni (Politecnico di Milano, Italy)
- Maxwell Prize: Weinan E (Peking University, China & Princeton University, USA)
- Pioneer Prize: Leslie Greengard (New York University, USA)
- Su Buchin Prize: Jose Mario Martinez Perez (University of Campinas, Brazil)
- Industry Prize: Cleve B. Moler (Math Works Inc., USA)

Read more about the winners at <https://iciam.org/2023-iciam-prizes-recipients-and-committees>.

# Other meetings around the world

## Excellence in Statistical Science

**October 14–16, 2022, at the University of Connecticut, Storrs, CT, USA**

<https://statds.org/events/stat60anniversary/>

This year marks the 60th anniversary of the Department of Statistics at UConn. Founded in 1962, as one of the major statistics departments in New England, the department provides outstanding preparation for careers in academia, industry, or government. As of 2022, we have a core faculty of 22 members whose teaching and research expertise span virtually all major specializations in statistical science. The department has both national and international reputation in undergraduate and graduate education, research, and service to the profession. The department offers BA/BS in Statistics, BA/BS majors in Mathematics and Statistics, Masters in Statistics, Masters in Biostatistics, and PhD in Statistics. At the 60th Anniversary Celebration of the Department, we are hosting a conference with the theme “Excellence in Statistical Science”.

- Keynote addresses by **Nancy Reid**, University of Toronto, and **David Blei**, Columbia University.
- Makuch Lecture: Clarice Weinberg, National Institute of Environmental Health Sciences.
- Distinguished Alumni Award: Bani K. Mallick, Texas A&M University.
- Two sessions with statisticians and data scientists, and presentations on a wide variety of statistical and data science theory, methods and practice.
- Two career panels sharing their experience and tips on careers in statistics and data science
- Alumni panelists from academia, industry, and government sectors.
- Posters by students showing frontier works of statistics and data science.
- Showcases of statistical consulting service at UConn by faculty, students, and clients
- The annual department student awards presented in the closing ceremony by special guests
- Faculty Book Gallery: books by current faculty at [https://statds.org/events/stat60anniversary/book\\_gallery.html](https://statds.org/events/stat60anniversary/book_gallery.html)

## 7th International French-speaking

**Conference for Teaching Statistics (CFIES)**

**November 23–25, 2022**

**Rennes, France**

<https://cfies2022.sciencesconf.org>

The objective of this three-day conference is to bring together teachers and researchers from the disciplines concerned (mathematics, educational sciences, knowledge engineering, computer science). The main themes this year are *Statistical and digital education* and *Competency-based education*.

Registration for the conference is now open. All relevant information may be found on the website above.

## 15th International Congress on Mathematics Education

**July 7–14, 2024**

**Sydney, Australia**

<https://icme15.com/home>

The 15th International Congress on Mathematics Education will be July 7–14, 2024, in Sydney Australia. Please visit the website for information and click the *Register your interest now* button to receive updates and information on the congress and subscribe to the ICME-15 newsletter.

# Employment Opportunities

## Austria: Klosterneuburg

**Institute of Science and Technology in Austria**

Assistant Professor (tenure-track) and Professor positions in Data Science

<https://jobs.imstat.org/job//65247341>

## Canada: Waterloo, ON

**University of Waterloo**

Four Positions in Statistics, Biostatistics or Data Science

<https://jobs.imstat.org/job//65633257>

## Canada: Waterloo, ON

**University of Waterloo**

Position in Actuarial Science or Quantitative Finance

<https://jobs.imstat.org/job//65633242>

## China: Guangzhou

**Hong Kong University of Science and Technology (Guangzhou)**

Open Rank Faculty Positions in Financial Technology Thrust, The Hong Kong University of Science and Technology (Guangzhou)

<https://jobs.imstat.org/job//65875765>



# Employment Opportunities continued

## China: Shanghai

### NYU Shanghai

Tenured/Tenure-Track Positions in Operations & Business Analytics

<https://jobs.imstat.org/job//65554434>

## China: Shenzhen

### The Chinese University of Hong Kong, Shenzhen, School of Data Science

Tenured or tenure-track positions (all ranks)

<https://jobs.imstat.org/job//65816486>

## Switzerland: Lausanne

### EPFL

Full Professor of Statistics at the Ecole Polytechnique Federale de Lausanne

<https://jobs.imstat.org/job//65133334>

## Taiwan: Taipei

### National Taiwan University, Institute of Statistics and Data Science

Faculty Positions at National Taiwan University--Institute of Statistics and Data Science

<https://jobs.imstat.org/job//64514112>

## Taiwan: Taipei City

### Institute of Statistical Science, Academia Sinica, Taiwan

Tenure-Track Faculty Positions

<https://jobs.imstat.org/job//54387703>

## United Kingdom: London

### London School of Economics

Assistant Professor in Data Science

<https://jobs.imstat.org/job//65795906>

## United States: Tempe, AZ

### Arizona State University, School of Maths & Stats

Presidential Postdoctoral Fellowship in Mathematical Biology

<https://jobs.imstat.org/job//65653753>

## Institute of Statistical Science, Academia Sinica, Taiwan Tenure-Track Faculty Positions

The Institute of Statistical Science of Academia Sinica is pleased to invite applications for our tenure-track faculty positions. Academia Sinica, the most preeminent academic research institution in Taiwan, offers a secured research environment facilitated with rich collaboration opportunities as well as the freedom of conducting independent research. With a strong tradition of theoretical and interdisciplinary research, the Institute of Statistical Science is aiming for global excellence in mathematical statistics and various statistical applications.

Applications are invited for tenure-track appointments as Full/Associate/Assistant Research Fellows (equivalent to Full/Associate/Assistant Professors in Universities) at the Institute of Statistical Science to commence on August 1, 2023 or as soon as possible thereafter. Applicants should possess a Ph.D. degree in Statistics, Biostatistics, Computer Science, Data Science or related areas, and should submit: (1) a cover letter, (2) an up-to-date curriculum vita, (3) a detailed publication list, (4) a research proposal, (5) three letters of recommendation, (6) representative publications and/or technical reports and (7) advisers' names of master and PhD degrees. Additional supporting materials such as transcripts for new Ph.D. degree recipients may also be included. Electronic submissions are encouraged. Applications should be submitted to

Dr. Hsin-Chou Yang, Chair of the Search Committee  
Institute of Statistical Science, Academia Sinica  
128 Sec. 2 Academia Road, Taipei 11529, Taiwan, R.O.C.  
Fax: +886-2-27886833  
E-mail: [recruit@stat.sinica.edu.tw](mailto:recruit@stat.sinica.edu.tw)

Application materials should be received by **December 16, 2022** for consideration, but early submissions are encouraged.

# Employment Opportunities continued

## United States: Berkeley, CA

### University of California, Berkeley Department of Statistics

Assistant Professor - Statistics, Data Science - Department of Statistics

<https://jobs.imstat.org/job//65309446>

## United States: Berkeley, CA

### University of California, Berkeley Department of Statistics

Assistant Teaching Professor - Data Science and Statistics - Department of Statistics

<https://jobs.imstat.org/job//65331424>

## United States: Berkeley, CA

### University of California, Berkeley Department of Statistics

Assistant Professor - Statistics, Data Science, Computational or Theoretical Neurosciences - Statistics Department and Helens Wills Neuroscience Institute

<https://jobs.imstat.org/job//65374769>

## United States: Hayward, CA

### California State University East Bay

Assistant Professor of Statistics and Biostatistics

<https://jobs.imstat.org/job//64511461>

## United States: Los Angeles, CA

### USC Marshall School of Business- Data Sciences and Operations

Professor of Clinical Data Sciences and Operations (Open Rank)

<https://jobs.imstat.org/job//65133623>

## United States: Los Angeles, CA

### USC Marshall School of Business- Data Sciences and Operations

Tenure-Track Faculty Position in Statistics

<https://jobs.imstat.org/job//65266722>

## United States: Riverside, CA

### University of California Riverside

Assistant Professor in Statistics

<https://jobs.imstat.org/job//65795208>

## United States: San Francisco, CA

### San Francisco State University

Assistant Professor, Statistics, Mathematics

<https://jobs.imstat.org/job//65750209>

## United States: Stanford, CA

### Stanford University

Faculty Position, Joint Search, Stanford Data Science and Wu Tsai Neurosciences Institute Stanford University

<https://jobs.imstat.org/job//65836327>

## United States: Stanford, CA

### Stanford University, Data Science and Department of Statistics

Assistant Professor of Statistics, Data Science

<https://jobs.imstat.org/job//65423668>

## United States: Fort Collins, CO

### Colorado State University

Full Professor/Associate Professor

<https://jobs.imstat.org/job//64735458>

## United States: New Haven, CT

### Yale University Department of Statistics and Data Science

Assistant, Associate, and Full Professor Positions

<https://jobs.imstat.org/job//65773914>

## United States: Washington, DC

### CIA

Science, Technology & Weapons Analyst

<https://jobs.imstat.org/job//65521691>

## United States: Washington, DC

### CIA

DA Fellowship Program

<https://jobs.imstat.org/job//65521688>

## United States: Gainesville, FL

### University of Florida, Department of Statistics

Assistant Professor of Statistics

<https://jobs.imstat.org/job//65673454>

## United States: Champaign, IL

### Department of Statistics University of Illinois at Urbana-Champaign

Open Rank Faculty Positions in Statistics and Data Science

<https://jobs.imstat.org/job//65374291>

**United States: Evanston, IL****Northwestern University, Department of Statistics**

Statistics/Data Science/Machine Learning Tenure-Track Assistant  
Professor Faculty Position  
<https://jobs.imstat.org/job//65699989>

**United States: Normal, IL****Illinois State University**

Assistant Professor of Statistics  
<https://jobs.imstat.org/job//65795665>

**United States: Bloomington, IN****IU School of Public Health**

SPH Post-Doctoral Fellow  
<https://jobs.imstat.org/job//65443026>

**United States: Notre Dame, IN****University of Notre Dame**

Assistant Professor in Statistics/Data Science  
<https://jobs.imstat.org/job//65795905>

**United States: West Lafayette, IN****Purdue University**

Clinical Faculty in Quantitative Methods  
<https://jobs.imstat.org/job//65423478>

**United States: Boston, MA****Boston University, Mathematics & Statistics**

Tenure-track Assistant Professor - Statistics  
<https://jobs.imstat.org/job//65197254>

**United States: College Park, MD****University of Maryland, Epidemiology & Biostatistics**

Clinical Assistant Professor in Biostatistic  
<https://jobs.imstat.org/job//65652798>

**United States: Ann Arbor, MI****University of Michigan**

Tenure-Track Assistant Professor  
<https://jobs.imstat.org/job//64771816>

**United States: Minneapolis, MN****University of Minnesota, School of Statistics**

Tenure Track Assistant Professor  
<https://jobs.imstat.org/job//65032097>

**United States: Minneapolis, MN****University of Minnesota, School of Statistics**

Tenure Track Assistant Professor  
<https://jobs.imstat.org/job//65032058>

**United States: Minneapolis, MN****University of Minnesota, School of Statistics**

IRSA Faragher Distinguished Postdoctoral Fellowship  
<https://jobs.imstat.org/job//65815943>

**United States: Durham, NC****Duke University, The Fuqua School of Business**

Tenure Track Faculty Position in Decision Sciences  
<https://jobs.imstat.org/job//65572999>

**United States: Raleigh, NC****North Carolina State University**

Financial Mathematics - Open Rank/Tenure Track Faculty Position  
<https://jobs.imstat.org/job//65309006>

**United States: Ithaca, NY****Cornell University, ORIE**

Tenure Track Faculty Position, Cornell University, Ithaca campus  
<https://jobs.imstat.org/job//65673977>

**United States: New York, NY****Columbia University**

Assistant Professor  
<https://jobs.imstat.org/job//65813345>

**United States: New York, NY****NYU Stern School of Business**

2023–2024 Assistant Professor of Technology, Operations, &  
Statistics - Statistics Group (full-time, tenure-track)  
<https://jobs.imstat.org/job//65774052>

# Employment Opportunities continued

**United States: Stony Brook, NY****Stony Brook University**

IACS Postdoctoral Fellowship

<https://jobs.imstat.org/job//65633083>**United States: Columbus, OH****Ohio State University, Department of Statistics**

Four Tenure-Track Assistant Professor Positions in Statistics

<https://jobs.imstat.org/job//65698644>**United States: Bethlehem, PA****Lehigh University, College of Health**

Health Data Scientist - mHEALTH or Telehealth

<https://jobs.imstat.org/job//65749947>**United States: Bethlehem, PA****Community and Population Health**Health Data Scientist - Visualization, Auralization, Haptics  
(Assistant/Associate)<https://jobs.imstat.org/job//65501481>**United States: Bethlehem, PA****Community and Population Health**

Health Data Scientist - Artificial Intelligence

<https://jobs.imstat.org/job//65749937>**United States: Pittsburgh, PA****CARNEGIE MELLON UNIVERSITY: HEINZ COLLEGE**

Assistant Teaching Professor of Database and Data Science

<https://jobs.imstat.org/job//65816230>**United States: Columbia, SC****University of South Carolina**

Assistant/Associate/Full Professor

<https://jobs.imstat.org/job//65750154>**United States: Memphis, TN****The University of Memphis - School of Public Health**

Assistant/Associate Professor of Teaching in Biostatistics

<https://jobs.imstat.org/job//65634112>**United States: Memphis, TN****University of Memphis**

Assistant Professor - Data Science

<https://jobs.imstat.org/job//65703881>**United States: College Station, TX****Texas A&M University, Department of Statistics**

Academic Professional Track (Non-Tenure): Lecturer of Statistics

<https://jobs.imstat.org/job//65423435>**United States: Waco, TX****Baylor**

Assistant/Associate Professor, Data Science

<https://jobs.imstat.org/job//65442749>**United States: Arlington, VA****Biocomplexity Institute and Initiative**

Research Faculty in Statistical and Quantitative Sciences

<https://jobs.imstat.org/job//65068695>**United States: Charlottesville, VA****University of Virginia, Department of Statistics**

One Endowed Professor and Two Tenured Track Assistant Professors

<https://jobs.imstat.org/job//65576334>**United States: Fairfax, VA****George Mason University**

Multiple Open-Rank, Term Faculty Positions (Assistant/Associate/Full Professors)


<https://jobs.imstat.org/job//65837145>**United States: Seattle, WA****University of Washington, Department of Statistics**

Assistant Professor in Statistics

<https://jobs.imstat.org/job//65308973>




# International Calendar of Statistical Events



IMS meetings are highlighted in maroon with the  logo, and new or updated entries have the  or  symbol. Please submit your meeting details and any corrections to Elyse Gustafson: [ims@imstat.org](mailto:ims@imstat.org)


At the time of writing, some meetings are known to be  or canceled. Where new dates are known, they are included here. Some meetings, marked , are offering a virtual format. Please check meeting websites for updates.



## Online and Ongoing


  **Asia-Pacific Seminar in Probability and Statistics**  
w <https://sites.google.com/view/apsp/home>

  **COPSS–NISS COVID-19 Data Science Webinar series** w <https://www.niss.org/copss-niss-covid-19-data-science-webinar-series>

  **One World ABC Seminar**  
w <https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar>


  **One World Probability Seminar**  
w <https://www.owprobability.org/one-world-probability-seminar>

  **One World YoungStatS Webinar series**  
w <https://youngstats.github.io/categories/webinars/>

 **Video series: *The Philosophy of Data Science***  
w <https://www.podofasclepius.com/philosophy-of-data-science>




## October 2022


 **October 14–16:** UConn, Storrs, CT, USA. **Excellence in Statistical Science** w <https://statds.org/events/stat60anniversary/>

 **October 21–22:** College Station, TX, USA. **Conference on Advances in Data Science: Theory, Methods and Computation** w <https://iamcs.tamu.edu/conference-on-advances-in-data-science-theory-methods-and-computation/>

 **October 24–28:** Puerto Varas, Chile. **BNP13: Bayesian Nonparametrics** w <https://midas.mat.uc.cl/bnp13/>

## November 2022

   **November 9:** Online. **YoungStatS webinar: Recent challenges in model specification testing based on different data structures** w <https://youngstats.github.io/post/2022/09/29/recent-challenges-in-model-specification-testing-based-on-different-data-structures/>

 **November 23–25:** Rennes, France. **7th International French-speaking Conference for Teaching Statistics (CFIES)** w <https://cfies2022.sciencesconf.org>

## December 2022


 **December 13–16:** Florence, Italy. **IMS International Conference on Statistics and Data Science (ICSDS)**  
w <https://sites.google.com/view/icsds2022>

**December 18–20:** Hong Kong. **ICSA International Conference**  
w <https://www.icsa.org/12th-icsa-international-conference-december-18-20-2022/>


## January 2023

**January 9–11:** Scottsdale, USA. **ICHPS 2023 International Conference on Health Policy Statistics** w <https://ww2.amstat.org/meetings/ichps/2023/>

## February 2023


 **February 2–4:** San Francisco, USA. **CSP2023: Conference on Statistical Practice** w <https://ww2.amstat.org/meetings/csp/2023/index.cfm>

## March 2023

 **March 8–11:** Tucson, USA. **2023 Seminar on Stochastic Processes** w <https://ssp2023.math.arizona.edu/home>



 **March 22–25:** Nashville, USA. **2023 ENAR/IMS Spring Meeting** w <http://www.enar.org/meetings/future.cfm>

## April 2023


 **April 4–6:** Livingstone, Zambia. **2023 Zambia Conference: Better Lives for 2030** w [www.zamstats.gov.zm/2023-iaos-isi-about-conference/](http://www.zamstats.gov.zm/2023-iaos-isi-about-conference/)

# International Calendar *continued*

## May 2023

  May 8–10: Princeton University, NJ, USA. **Statistical Foundations of Data Science and their Applications: conference in celebration of Jianqing Fan's 60th birthday** **w** <http://fan60.princeton.edu/>

 May 15–16: Duke University, USA. **Southeastern Probability Conference I** **w** <https://services.math.duke.edu/~rtd>

 May 23–26: St. Louis, Missouri, USA. **Symposium on Data Science and Statistics** **w** <https://ww2.amstat.org/meetings/sdss/2023/index.cfm>

## July 2023


July 15–20: Ottawa, Canada. **ISI World Statistics Congress** **w** <https://www.isi2023.org/>

 July 24–28: Lisbon, Portugal. **43rd Conference on Stochastic Processes and their Applications (SPA)** **w** <https://www.spa2023.org/>



## August 2023

 August 5–10: Toronto, Canada. **IMS Annual Meeting at JSM 2023** **w** <http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx>

 August 14–15: University of Virginia, USA. **Southeastern Probability Conference II** **w** <https://services.math.duke.edu/~rtd>

 August 20–25: Tokyo, Japan. **ICIAM2023: 10th International Congress on Industrial and Applied Mathematics** **w** <https://iciam2023.org/>

## January 2024


  January dates TBC (postponed from January 2021): Melbourne, Australia. **IMS Asia Pacific Rim Meeting (IMS-APRM2021)** **w** <http://ims-aprm2021.com/>

## March 2024

 March 10–13: Baltimore, USA. **2024 ENAR/IMS Spring Meeting** **w** <http://www.enar.org/meetings/future.cfm>

## July 2024

Dates TBC: Venice, Italy. **ISBA World Meeting 2024** **w** <https://bayesian.org/2024-world-meeting/>

 July 7–14: Sydney, Australia. **15th International Congress on Mathematics Education** **w** <https://icme15.com/home>

## August 2024

 August 3–8: Portland, OR, USA. **JSM 2024** **w** <http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx>

 August 12–16: Bochum, Germany. **Bernoulli/IMS World Congress in Probability and Statistics** **w** TBC

## August 2025

 August 2–7: Nashville, TN, USA. **IMS Annual Meeting at JSM 2025** **w** <http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx>

## August 2026

 August 1–6: Boston, MA, USA. **JSM 2026** **w** <http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx>

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 [ims@imstat.org](mailto:ims@imstat.org), or you can submit the details yourself at <https://www.imstat.org/ims-meeting-form/>

We'll list them here in the Bulletin, and on the IMS website too, at [imstat.org/meetings-calendar/](http://imstat.org/meetings-calendar/)

## Membership and Subscription Information: 2022

### 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 \$105. An additional \$120 is added to the dues of members for each scientific journal selected (\$77 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 2022 are available to *The Annals of Applied Probability* (\$235), *The Annals of Applied Statistics* (\$235), *The Annals of Probability* (\$235), *The Annals of Statistics* (\$235), *Statistical Science* (\$192), and *IMS Bulletin* (\$115). **General subscriptions** are for libraries, institutions, and any multiple-readership use. Institutional subscriptions for 2022 are available to *The Annals of Applied Probability*, *The Annals of Applied Statistics*, *The Annals of Probability*, and *The Annals of Statistics* (each title \$536 online only / \$649 print+online), *Statistical Science* (\$307/\$370), and *IMS Bulletin* (\$153 print). Airmail delivery is no longer offered.

### 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.

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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 3,500 paper copies, and it is also free online in PDF format at <https://www.imstat.org/ims-bulletin-archive/>, posted online about two weeks before mailout (average downloads over 8,000). Subscription to the *IMS Bulletin* costs \$115; call 877-557-4674 (US toll-free) or +1 216 295 2340 (international), or email [dues.subs@imstat.org](mailto:dues.subs@imstat.org). The IMS website, <https://imstat.org>, established in 1996, receives over 30,000 visits per month.

**Advertising job vacancies:** A single 60-day online job posting costs just **\$329.00**. 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 <https://jobs.imstat.org>

**Advertising meetings, workshops and conferences:** Meeting announcements here and on the IMS website at <https://imstat.org/meetings-calendar/> are free. Submit your meeting details at <https://www.imstat.org/ims-meeting-form/>

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Full page (within usual Bulletin margins)	7.5" wide x 9.42" high (190.5 mm x 239.1 mm)	\$520

### Deadlines and mailing dates for *IMS Bulletin*

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

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