IMS Bulletin

September 2024

CONTENTS

Read it online:
imstat.org/news

Rousseeuw Prize awarded for False Discovery Rate

Million-dollar Rousseeuw Prize for Statistics awarded to Yoav Benjamini, Daniel Yekutieli and Ruth Heller

An international and independent jury, appointed by the King Baudouin Foundation, has selected the pioneering work on the **False Discovery Rate (FDR)** as the recipient of the prestigious biennial Rousseeuw Prize for Statistics 2024. This million-dollar prize honors exceptional statistical research that profoundly influences society. The inaugural prize in 2022 celebrated advancements in causal inference. This year's award focuses on the False Discovery Rate (FDR) and Methods to Control It. The 1995 paper by Benjamini and Hochberg introduced FDR, providing a framework for further expansion and publications. The laureates of the prize are **Yoav Benjamini**, **Daniel Yekutieli**, and **Ruth Heller** from Tel Aviv University. **Yosef Hochberg** also deserves much recognition, but sadly is no longer alive.

The laureates' research has led to a method to limit the number of false discoveries without stifling the potential for true discoveries. The FDR work being honored has created new concepts and methodologies to help scientists find real discoveries among many possible results, while keeping the error from false discoveries low. This need arises from the fundamental problem in science that any conclusion from the analysis of data is prone to uncertainty. Therefore, thresholds were adopted for commonly used

The Laureates of the 2024 Rousseeuw Prize in Statistics, for their work on the False Discovery Rate, are (left–right) Ruth Heller, Yoav Benjamini and Daniel Yekutieli

IMS Bulletin

IMS Members' News

SSC Gold Medal awarded to Cindy Greenwood

The 2024 Gold Medal of the Statistical Society of Canada is awarded to **Priscilla E. (Cindy) Greenwood**, professor emerita in the Department of Mathematics at the University of British Columbia. The citation for the Gold Medal Award, which is given to one person each year for outstanding and continuing contributions to probability theory and/or the statistical sciences, reads: "To Priscilla E. (Cindy) Greenwood, for fundamental and highly original contributions to the theory of stochastic processes and to statistical inference for complex stochastic models; and for insightful illumination of stochastic mechanisms in neuroscience and other scientific disciplines."

Cindy Greenwood

Cindy Greenwood is an IMS Fellow, and was awarded the Krieger–Nelson Prize of the Canadian Mathematical Society in 2002. In 2008–2009 a *Festschrift,* in the form of a special volume of *Stochastics,* was put together in her honor, published as part of the now discontinued *IMS Lecture Notes – Monograph Series.* The lead article is a thoughtful summary of her contributions up to that point by Igor Evstegneev and Nick Bingham, entitled "Priscilla Greenwood: Queen of Probability." (You can download the January/February 2009 issue of the *IMS Bulletin*, at https://imstat.org/wp-content/uploads/Bulletin38_1.pdf, to read an article about this by Bingham and Evstegneev). She was made a Member of the Order of Canada in 2020 "for contributions to the fields of statistics and mathematics, and for her pioneering work in probability theory."

Read more at https://ssc.ca/en/awards/2024/cindy-greenwood-ssc-gold-medalist-2024

The *Canadian Journal of Statistics* Award

The *Canadian Journal of Statistics* Award is awarded annually by the SSC to the author(s) of an article published in the previous year in the journal, in recognition of the outstanding quality of the paper's methodological innovation and presentation. The authors honored are **Cong Jiang**, **Michael Wallace**, and [IMS member] **Mary Thompson**, for their paper, "Dynamic treatment regimes with interference."

Alexandre Bouchard-Côté wins CRM–SSC Prize in Statistics 2024

The CRM–SSC Prize in Statistics recognizes a statistical scientist's excellence and accomplishments in research during the first fifteen years after earning his/her doctorate (or equivalent degree). It is awarded annually by the Centre de recherches mathématiques and the Statistical Society of Canada. This year's winner is **Alexandre Bouchard-Côté** from the University of British Columbia. More at https://ssc.ca/en/awards/2024/alexandre-bouchard-cote-crm-ssc-prize-statistics-2024

SSC Lise Manchester Award

IMS member **Christian Genest** (McGill University), together with **Jonathan Jalbert** (Polytechnique Montréal) and **Luc Perreault** (Institut de recherche d'Hydro-Québec) are the recipients of the 2024 Lise Manchester Award. This award is given every other year by the Statistical Society of Canada to commemorate the late Dr Lise Manchester's abiding interest in using statistical methods to study matters of relevance to society. The award recognizes excellence in statistical research that helps guide public policy in Canada.

See https://ssc.ca/en/award-winners

Rob Kass to deliver Myles Hollander Distinguished Lectureship 2024

The Department of Statistics at Florida State University announced that **Robert E. Kass**, the Maurice Falk University Professor of Statistics and Computational Neuroscience in the Department of Statistics and Data Science, the Machine Learning Department and the Neuroscience Institute at Carnegie Mellon University, is the 2024 Myles Hollander Distinguished Lecturer. Kass will present *Reasoning from Data in Science* on October 4, 2024, on FSU's Tallahassee campus. The live talk will also be accessible via Zoom (the registration link is at https://stat.fsu.edu/hollander-distinguished-lectureship-2024).

Rob Kass's early work formed the basis for his co-authored book, *Geometrical Foundations of Asymptotic Inference*, and his subsequent research has sought to understand how reasoning from data produces reliable scientific knowledge. For Bayesian inference, Kass and colleagues provided comprehensive reassessment of the evaluation of evidence concerning hypotheses and determination of prior probabilities. Kass is a leader in the application of statistics to neuroscience, where he has focused on tractable data-analytic statistical models for spike trains, i.e., data representing the primary mode of communication among neurons, and co-authored the book *Analysis of Neural Data*.

Kass served as chair of the Statistics Section of the American Association for the Advancement of Science, founding editor-in-chief of *Bayesian Analysis*, and executive editor of *Statistical Science*. He received the Outstanding Statistical Application Award from the American Statistical Association and the COPSS Distinguished Achievement Award and Lectureship. Kass is an elected Fellow of the ASA, IMS and AAAS, and an elected member of the National Academy of Sciences [*pictured above being inducted into the NAS last year*].

Fifth Akaike Memorial Lecture Award

The Fifth Akaike Memorial Lecture will be delivered by **Arnaud Doucet**, a professor at the University of Oxford and a Senior Staff Research Scientist of Google DeepMind. Professor Doucet is a leading international researcher in Monte Carlo methods and their applications to Bayesian statistics and, more recently, in machine learning. With his innovative approach, Professor Doucet has achieved remarkable results in new areas as well. The award ceremony and memorial lecture will be held at the Japanese Joint Statistical Meeting (JJSM), September 1–5, 2024, which will be in a hybrid format with online and on-site participation options at the Tokyo University of Science, Japan.

The Akaike Memorial Lecture Award, launched in 2016, commemorates the achievements of the late Dr. Hirotugu Akaike, who established a novel paradigm to evaluate the predictive accuracy of statistical modeling. Dr. Akaike proposed a metric for model selection, the Akaike Information Criterion (AIC), based on an approach completely different from the statistical theories common at the time. The award is jointly managed by the Institute of Statistical Mathematics (ISM) and the Japanese Federation of Statistical Science Associations (JFSSA).

Read more about the award, Arnaud Doucet, and Hirotugu Akaike, at https://www.ism.ac.jp/ura/press/ISM2024-01_e.html

More IMS Members' News

Bradley Efron's bootstrap talk on C.R. Rao's birthday

On September 10, 2024, Professor Bradley Efron from Stanford University will be delivering a talk on the topic *"A diagnostic function for bootstrap confidence intervals"* in honor of the late Dr. C.R. Rao's birthday.

This online event is the first in a series organized to celebrate the birthday of the esteemed statistics legend, who passed away in 2023 at the age of 102. The event is being held by friends, collaborators, and students of Dr. Rao and will be hosted by Arni S.R. Srinivasa Rao from the Medical College of Georgia at Augusta University, USA. It will take place from 12:00–1:00 pm PT / 3:00–4:00 pm ET. Special guests from C.R. Rao's family include his daughter Dr. Tejaswini Rao from Buffalo, and his son Mr. Veerendra Rao from Pittsburgh. A vote of thanks will be given by Ravi Khattree from Oakland University, USA.

The Zoom link is https://bit.ly/3M97I8y (if you are reading this before September 10). Otherwise, a recording of the talk will be uploaded to the Information Geometry YouTube channel, http://www.youtube.com/@informationgeometry7337 (where you can also view a recording of the JSM2020 special session to celebrate C.R. Rao's 100th birthday, with speakers Professors David Cox, Donald Rubin, and Bradley Efron, and session chair Arni S.R. Srinivasa Rao).

International Day of Women in Statistics and Data Science

October 8, 2024

A free, virtual 24-hour conference, hosted by the Caucus for Women in Statistics and Data Science **idwsds.org**

Caucus for Women in Statistics and Data Science 2024 award winners

Dong-Yun Kim and Jessica Kohlschmidt write: The Caucus for Women in Statistics and Data Science (CWS) offers awards and scholarships to selected members each year: https://cwstat.org/awards/. Since 2016, CWS has been helping early-career professionals and students travel to participate in the annual JSM meetings. This year, we have a Lee Travel Award winner, IMS member **Jaihee Choi** at Rice University; and two Do Bui Travel Award winners: **Kimberly Webb** at Cornell University, and **Zihan Zhang** at Georgia Institute of Technology.

The CWS Societal Impact Award was founded in 2021 by Dr. Wendy Lou at University of Toronto. The award is given annually to a statistician or data scientist who has actively worked to advance social justice, or diversity, equity and inclusion through their research, teaching or service. This year's Societal Impact Award winner is Dr. **Tae Rim Lee**, Professor Emerita at Korea National Open University, South Korea. She has held major leadership roles, including serving as president in several statistical and health information societies. She also served on various national and international committees, including the International Biometric Society and the International Federation of Classification Societies. Dr. Lee has been a strong advocate of e-learning, coordinating the e-ASEM Network from 2010 to 2020. She founded Women in Statistics in Korea (WISK) in 2019 and has encouraged junior female statisticians to focus more on their own research. Although retired from her faculty position, Dr. Lee remains active, currently serving as Vice President of the Korean Association of Senior Scientists and Engineers, promoting science and engineering through digital platforms. Her pioneering work continues to inspire and influence the younger generations in the fields of statistics and education.

The CWS Woodroofe Award was founded by Dr. Dong-Yun Kim at NHLBI/NIH in 2023. Through this award, Dr. Kim honors the towering intellectual legacy of Prof. Michael Woodroofe so that science and society continues to benefit from his impact. This award honors women who have made significant contributions to solve real-world problems by applying novel or existing theories during their mid-career. The year's winners are [IMS member] Dr. **Yao Xie** at Georgia Tech and Dr. **Yang Chen** at the University of Michigan. Renowned for her innovative methods in statistical learning, Dr. Yao Xie has made significant strides in sequential analysis and change-point detection. Her work tackles real-world challenges by developing advanced algorithms for big data problems, including sparse changes in high-dimensional data and spatio-temporal modeling. Notably, her methods have been successfully applied to enhance crime data analysis and optimize police zone designs, demonstrating profound societal impact. Dr. Xie's research combines rigorous statistical theory with practical applications, making her a stand-out in the field of statistics and data science. Dr. Yang Chen is recognized for her cutting-edge work in statistical learning, particularly within space science and astrophysics. Her innovative methodologies address the complexities of "big data" challenges, including developing advanced techniques for data-driven space weather predictions and high-resolution solar imaging. Her work not only improves our understanding of solar physics but also contributes to practical applications in managing vast data streams from space-borne telescopes. Dr. Chen's methods are at the forefront of addressing critical data-analytic challenges, showcasing a blend of theoretical insight and impactful real-world applications.

The IMS Grace Wahba Award was presented to Nancy Reid [r] by session chair Daniela Witten

IMS at JSM

Among the many events of interest at the Joint Statistical Meetings in Portland this year was the IMS Grace Wahba Award lecture by Nancy Reid [*left*], and three IMS Medallion Award lectures, by Annie Qu, Alicia Carriquiry and Jing Lei [*below*]. Some of this year's newly elected IMS Fellows met up, too [*right*].

Some of the new IMS Fellows, who met up at JSM [left–right]: Josée Dupuis, Debashis Ghosh, Sunil Rao, Shili Lin, and Edsel Peña

Medallion lecturer Annie Qu with IMS Invited Program chair Ji Zhu

Medallion lecturer Alicia Carriquiry with Ji Zhu

Ji Zhu [left] presents Medallion to lecturer Jing Lei

Medallion lecturer photos courtesy Eric Sampson / ASA

Calls for Nominations

2025 Ethel Newbold Prize

The Bernoulli Society's Ethel Newbold Prize, established in 2014, honors the significant contributions of women to the field of statistics. The biennial award, generously supported by Wiley, recognizes excellence in statistics without regard to the gender of the recipient. The 2025 Ethel Newbold Prize will be awarded to an **outstanding early or mid-career scientist whose work demonstrates excellence in mathematical statistics or in research that links developments in a substantive field to new advances in statistics.** The award consists of the prize amount of 2,500€ together with an award certificate. The recipient will also be invited to present a talk at the next Bernoulli–IMS World Congress, a Bernoulli-sponsored major conference, or the ISI World Statistics Congress. The prize will only be awarded if the set of nominations includes candidates of both genders. Nominations should include a letter outlining the nominee's achievements and contributions and a recent curriculum vitae of the nominee. In order to nominate someone, please send your nomination and any inquiries to Adrian Röllin at adrian.roellin@nus.edu.sg. The deadline for submissions is **30 November 2024**. The winner will be announced in early 2025. For more information, see https://www.bernoullisociety.org/index.php/prizes?id=207

C.R. and Bhargavi Rao Prize

The C.R. and Bhargavi Rao Prize for Outstanding Research in Statistics, awarded by the Penn State Department of Statistics, was established to recognize **outstanding and influential innovations in the theory and practice of mathematical statistics, international leadership in directing statistical research, and pioneering contributions by a recognized leader in the field of statistics**. The Rao Prize is awarded in odd-numbered years to an individual selected by the members of the Rao Prize Committee. The honoree receives a plaque and an invitation to visit Penn State to give a talk. Nominations should include a letter describing the nominee's outstanding contributions to leadership and research in statistics, a current curriculum vita, and two supporting letters. Submissions are due **January 15, 2025**, and should be emailed to Prof. Nicole Lazar, Head of the Department of Statistics, at nfl5182@psu.edu.
See https://science.psu.edu/stat/rao-prize

IMS Lectures

Nominate the **2026 Blackwell lecturer,** the **2026 IMS Grace Wahba lecturer,** or the **2027 IMS Medallion lecturers** by **October 1**: see https://imstat.org/ims-special-lectures/

International Prize in Statistics

The International Prize in Statistics—one of the highest honors in statistics—is awarded every two years to **an individual or team for major achievements using statistics to advance science, technology, and human welfare**. See https://www.statprize.org for more information. Deadline **October 1, 2024.**

Rousseeuw Prize continued from cover

statistical methods such as "statistical significance," "*p*-value," and "confidence intervals" for determining the statistical validity of a single discovery. By the middle of the 20th century, concern was raised that the usual thresholds for a statistical discovery lose their meaning when comparing multiple groups and selecting the most promising differences with the usual thresholds, after viewing the data. Thus the level for tests of the individual hypotheses should be lowered. The new individual thresholds were determined so that the probability of even one false discovery among the many, known as the family-wise error rate, is controlled at an acceptable level. Extensive research in this field of Multiple Comparisons was devoted to methods that keep this requirement, but their ability to find discoveries was drastically reduced when the number of potential discoveries is large. Therefore, in many areas of science their use was very partial, and in others denied. In areas such as genomics, where the multiplicity of results screened for discoveries became increasingly large and the danger from ignoring the effect of selection is very apparent, the question whether or not to control for multiplicity was discussed as the choice between Plague and Cholera.

In 1989 Branko Soriç warned that by ignoring the multiple testing issue and focusing on selected statistical discoveries, "a large part of science may be false." Reading this paper, Benjamini and Hochberg realized that the proportion of false discoveries among the statistical discoveries may serve as a criterion for selection, rather than merely a warning. Intuitively, in a study with 100 genes, if 60 association discoveries are made and three are false, that is bearable; however, if only five discoveries are made and three are false, it is clearly unacceptable. The same logic holds even if a thousand or a million potential discoveries are screened. Benjamini and Hochberg formulated the criterion mathematically as the expectation of the proportion of false discoveries, and called it the False Discovery Rate.

In that same paper they offered a simple method that controls the FDR using marginal *p*-values, known as the Benjamini–Hochberg procedure (BH). The threshold for discoveries adapts to the data at hand: it can be as low as the control of the family-wise error rate requires if very few potential discoveries are apparent, but may be as permissive as ignoring multiplicity altogether when many clear discoveries exist.

The paper encountered serious objections from reviewers because it did not fit the family-wise error rate paradigm, so only three journals and five years later the first part was published (1995). The second part, which offered an even more adaptive method by estimating the number of null hypotheses, appeared only in 2000, ten years after it was first submitted. In later work Benjamini and Hochberg further allowed the potential discoveries to carry different weights that express varying importance, by incorporating the weights in the definition of FDR and in the BH procedure.

The work of Benjamini and Yekutieli (2001) extended the theoretical foundation of the BH procedure, allowing its use in the important setting of positively dependent statistics. They also suggested a modification of the procedure that allows one to use the BH procedure under any dependency, sometimes referred to as the Benjamini–Yekutieli procedure. Together with Abba Krieger they gave a theoretical foundation for it.

In later work Benjamini and Yekutieli proposed the False Coverage Rate (FCR) criterion for selected confidence intervals, and suggested such confidence intervals for a general class of selection rules. When the selection is according to the BH procedure, the conclusions from their intervals match those of the BH procedure. Equally importantly, that work clarified the common concept in testing and confidence intervals: Given a selection procedure based on the observed data, the statistical guarantees relevant for one discovery, such as coverage or type I error, are to hold on the average over the selected discoveries. As challenges in more complex behavioral genomic research were encountered, this general point of view was adapted to hierarchical testing of trees of hypotheses by Yekutieli, Benjamini, and later, Marina Bogomolov.

Entering the current century, science went through an industrialization process. Experiments in genomics or proteomics are done by high-throughput machines, and the outcomes are processed automatically, resulting in many potential discoveries. An important area where technical developments increased the size of potential discoveries is brain research. In functional brain imaging (fMRI), thousands of locations in the brain are tested for association with some thought process, say, recognizing an upside-down face. However, interest lies with discoveries of active regions rather than individual locations. Heller and Benjamini developed the theoretical and practical means to identify active regions while controlling the FDR of regions. In genomic research, the number of genes whose differential expression was studied reached tens of thousands, and the number of locations on the genome is in the millions. This field was initially prone to non-replicable discoveries, and again works of Heller and Benjamini, and then with Yekutieli, paved the way for methods to control the proportion of non-replicable results among those declared.

Due to advances in computing and databases, the FDR is increasingly being used in many other fields of science such as

agriculture, astronomy, behavioral science, economics and so on.

Motivated by wavelet analysis, joint work of Benjamini with Abramovich, Donoho and Johnstone demonstrated how FDR and the BH procedure are relevant and even asymptotically optimal for the estimation of sparse signals. Jointly with Gavrilov, they showed their relevance for model selection in linear regression. Also model selection methods relying on the FDR criterion but not involving the BH procedure were developed, such as the knockoff.

Outside of their collaboration with Benjamini, Yekutieli and Heller have made contributions to FDR research and more generally to the area of multiple testing. Yekutieli exposed the difference between situations where the Bayes argument excuses ignoring the multiplicity problem and when it does not, and offered adjusted Bayesian inference for the latter. The FCR criterion has further been adapted in conformal inference as the criterion to control for selected prediction intervals, and the central role of the BH procedure in the selection of informative prediction intervals has been highlighted in recent work by Gazin, Heller, Marandon, and Roquain. Heller and Yekutieli have continued to explore big replicability challenges. Heller worked on hierarchical FDR testing involving conditional tests, and recently Heller and Rosset offered an optimal FDR controlling procedure.

"The goal is to award pioneering work in statistical methodology with relevance to society. The focus is on the innovation, which allows recognition of several individuals who made important contributions. In the long run, it is hoped that the prize promotes awareness of the important role and intellectual content of statistics and its profound impact on human endeavors—and makes statisticians proud."
Prize sponsor Peter Rousseeuw,
from an interview with Kathy Ensor in 2022

As it turns out, FDR-related concepts are also relevant to other schools of thought in statistics such as empirical Bayes, led by Brad Efron and his collaborators. Research is still very active, attracting many other researchers, and its importance increases together with the complexity of the scientific questions being asked. All three laureates have continued to act separately, jointly, and with other researchers, to expand the FDR related methodologies to cater to the emerging needs of the scientific community.

The international jury appointed by the King Baudouin Foundation selected the winners from the nominations received, after a widely advertised call earlier this year. The jury consisted of its chair David Hand (Imperial College), Lutgarde Buydens (Radboud U Nijmegen), Probal Chaudhuri (Indian Statistical Institute), Roger Koenker (U of Illinois), Steve Marron (U of North Carolina), Cynthia Rudin (Duke U), Louise Ryan (U of Technology Sydney), David Steinberg (Tel Aviv U) who abstained due to proximity to the laureates, Maria-Pia Victoria-Feser (U of Bologna), and Huixia Judy Wang (George Washington U). For more information on the prize see www.rousseeuwprize.org.

About the Rousseeuw Prize

Statistics is a cornerstone of science, health, industry, economics, government and more, and benefits society as a whole. Nevertheless, research in statistics does not yet receive the same level of recognition as in related fields such as mathematics, physics, and computer science. The Rousseeuw Prize for Statistics is intended to help remedy this gap. It awards pioneering work in statistical methodology. The prize recognizes a statistical innovation, that is, an outstanding contribution or tool that has had significant impact and found wide application in statistical practice, with relevance to society. The Rousseeuw Prize focuses on the innovation rather than on a single individual. This allows to recognize several individuals who made important contributions to it.

One of the goals of awarding the people who created such an innovation, is to promote awareness of the important role and intellectual content of statistics and its profound impact on human endeavors.

The prize, awarded in even years, is one million US dollars, to be split between awardees if there are several, which it is hoped will typically be the case.

The first award ceremony took place in October 2022 at the University of Leuven, Belgium, honoring James Robins and his collaborators for their research on causal inference in medicine and public health.

For the purpose of the prize, statistics is defined as *the science and technology of obtaining useful information from data, taking its variability into account.* People often underestimate the difficulty of doing this well, due to the ease of doing it poorly.

Statistical work in the above sense can be found in astro-statistics, big data, biometrics, chemometrics, classification, data analysis, data collection, data mining, data science, data visualization, design of experiments, econometrics, environmetrics, genomic statistics, machine learning, multivariate analysis, pattern recognition, psychometrics, quality assurance, quantitative finance, regression, sociometrics, statistical computing, statistical learning, technometrics, time series analysis, etc.

Statistics as described above often applies methods from a host of important disciplines such as approximation theory, convex programming, differential equations, numerical linear algebra, optimization, probability theory, software engineering, and so on. Non-statistical work done in such fields is not covered by the present award.

Further background is on the prize website.

https://www.rousseeuwprize.org/about

World Congress in photos: report in next issue

Wald lecturer Peter Bühlmann

Medallion lecturer Chunming Zhang [r] with Holger Dette

Medallion lecturer Marc Hallin [r] with Davy Paindaveine

Medallion lecturer Moulinath Banerjee, with Peter Bühlmann

Medallion lecturer Remco van der Hofstad [r] with Nina Gantert

Michael Kosorok presented the 2023 Carver medal to Leif Döring

Pablo Ferrari gave the Bernoulli–IMS Doob Lecture

Nina Holden gave the 2024 Bernoulli–IMS Schramm Lecture

Patrícia Gonçalves gave the 2023 Bernoulli–IMS Schramm Lecture

Program co-chairs Aurore Delaigle and Kavita Ramanan, with Local Organizing Chair Herold Dehling
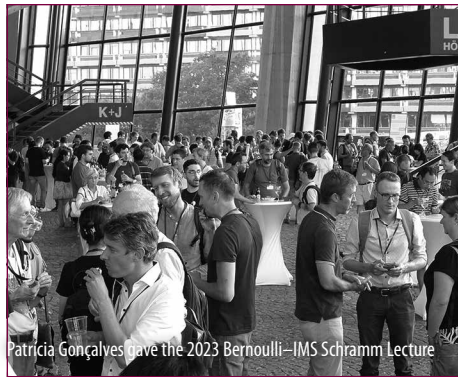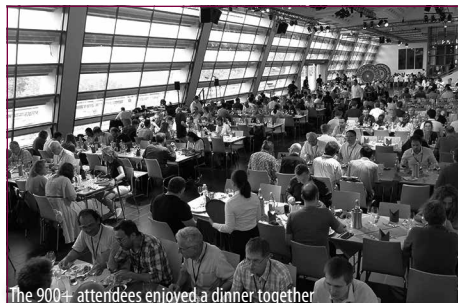

Bernoulli and IMS Presidents at the opening ceremony: Victor Panaretos and Michael Kosorok

Photo ©RUB, Marquard

Michael Kosorok handed over to the new IMS President Tony Cai

Patricia Gonçalves gave the 2023 Bernoulli–IMS Schramm Lecture

The 900+ attendees enjoyed a dinner together

The main lecture theatre featured this beautiful organ, played in the opening ceremony by Mathematics faculty member Christof Külske

Two of the Lawrence Brown PhD Student Award winners, Filippo Ascolani and Chanwoo Lee, with session chair Wai-Tong Louis Fan [left]. (Yuling Yan joined later online.)

The striking Audimax at Ruhr-Universität Bochum

Michael Kosorok: **IMS Presidential Address 2024**

IMS and the Future of Statistics and Probability

Michael R. Kosorok gave the IMS Presidential Address on August 12, 2024, at the Bernoulli–IMS World Congress in Bochum. He began by outlining his personal connections with IMS, described some of the functions and activities of the institute, and then moved to looking at critical thinking, before looking at how data science and artificial intelligence play a role in our future.

Michael Kosorok, IMS President 2023–2024, gave this Presidential Address at the World Congress in Bochum in August.

MY PERSONAL JOURNEY WITH THE IMS

I formed an impression of the IMS early in my career. In 1992 I was an Assistant Professor of Statistics/Biostatistics at the University of Wisconsin–Madison; by about 1998 I was learning about empirical processes, and I had set myself the goal of IMS fellowship. I organized some conferences as IMS Program Chair or Co-chair (the 2002 WNAR–IMS meeting, the 2006 ENAR–IMS spring meeting, and the 2009 JSM); I joined *The Annals of Statistics* as Associate Editor from 2004–21; and I achieved IMS Fellowship in 2007.

WHAT DOES IMS DO?

IMS, of course, organizes and sponsors many conferences, such as this World Congress. It also has many publications. There are the journals: the *Annals* (*of Probability*, *of Statistics*, *of Applied Probability* and *of Applied Statistics*) and *Statistical Science*. The other IMS publications include the *IMS Monographs* and *IMS Textbooks* series with Cambridge University Press, and the *IMS Bulletin.* The Institute co-sponsors six journals (https://imstat.org/journals-and-publications/ims-co-sponsored-journals-and-publications/) and supports five (https://imstat.org/journals-and-publications/ims-supported-journals/), with another three journals

having IMS Affiliated status (https://imstat.org/journals-and-publications/ims-affiliated-journals/).
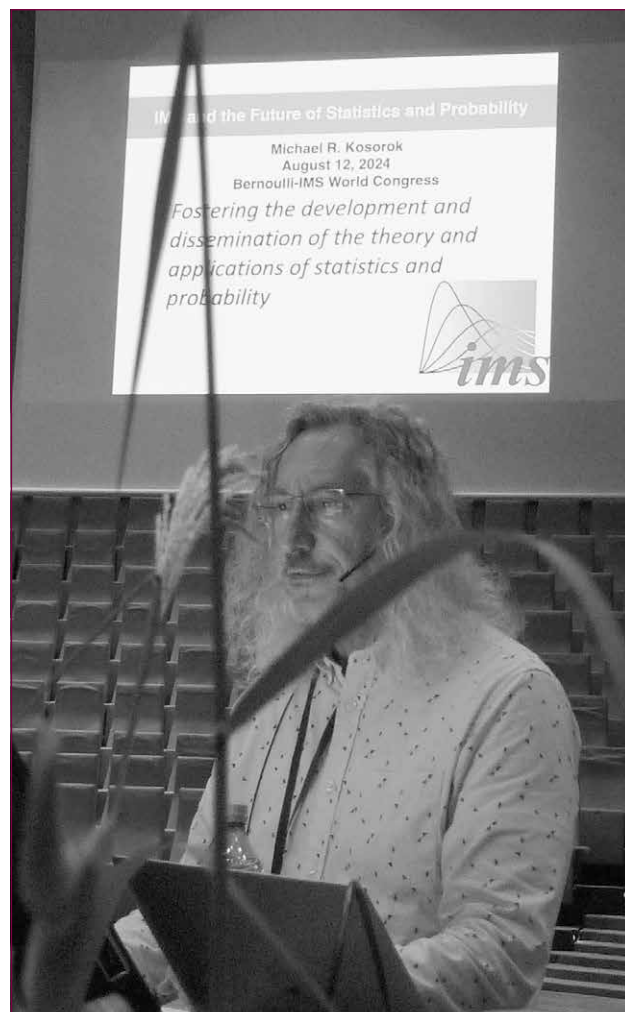
IMS supports New Researchers with travel grants and early-career awards, and bestows a range of other professional awards and named lectures for people in different career stages (see https://imstat.org/ims-awards/).

All these activities help to define and improve the fields of statistics and probability, and applications of both, and related research areas. Further, it helps to establish a culture of rigor in these areas.

THE PEOPLE OF IMS (INCLUDING YOU AND ME)

Who are the people who make the Institute run? Elyse Gustafson is the Executive Director; Tati Howell is *IMS Bulletin* editor; publications are managed by Patrick Kelly (IMS Production Editor), with Geri and Kristina Mattson (of Mattson Publishing Services); the website is managed by Laila Lunderman; and your dues and subscriptions are handled by Larissa Puryear.

The IMS Past President [*at the time of this Address*] is Peter Bühlmann. Peter is wise and patient, he remembers everything, is an outstanding researcher, and is kind.

The other Executive Committee members are President-elect [*again, at the time of this Address*] Tony Cai, Treasurer Jiashun Jin, Program Secretary Annie Qu, and Executive Secretary Peter Hoff.

The IMS Council is comprised of the Executive Committee, the nine Editors and Co-Editors of the five core IMS journals, and 15 elected Council Members.

Then there are the IMS Committees. We have 18 standing committees with over

150 committee positions. A semi-random sampling of these committees includes the following: Asia Pacific-Rim Meeting; IMS China; Co-Sponsorship; Brown and Zelen Awards; Hall Prize; Travel Awards; Equity and Diversity; Professional Code of Conduct; Fellows; Special Lectures; Finance; Memorials; Publications; Outreach; Nominations; Selection of Administrative Officers; Selection of Editors; and the New Researchers Group.

Finally, there are the members of IMS (roughly 4,700 people), and we should not forget the links with our many collaborators and students.

YOU AND ME AS RESEARCHERS: A PERSPECTIVE

I'd like to talk next about a 2008 essay by Martin A. Schwartz, "The importance of stupidity in scientific research" (*Journal of Cell Science* 121(11), 1771; DOI:10.1242/ jcs.033340). Schwartz is the Robert W. Berliner Professor of Medicine (Cardiology), Cell Biology & Biomedical Engineering at Yale University (h-index 124). In essence, what he said is that at some point in our

Finnish composer Jean Sibelius (1865–1957) had to grapple with both lavish praise and extremely harsh criticism about his work

PhD programs, we realize that no one actually knows the answer to our research question, and we need to find a solution. When we do science right, we realize that the amount we don't know is vast, basically infinite. We need to better mentor our students on how to be "productively stupid" (recognize, embrace and work with what we don't know), in other words, "If we don't feel stupid it means we're not really trying."

The Role of Insecurity and Confidence

We need to be aware of what we don't know and areas of difficulty for us (our weaknesses) as researchers. We also need to be aware of our strengths. If we are feeling insecure, we are in that moment emphasizing our weaknesses; if we're feeling confident, we are emphasizing our strengths. Success requires balance between these extremes – and the ability to not take either of them personally. Some of the best theoretical researchers struggle initially with at least some areas of knowledge that they eventually become expert at.

Managing Ups and Downs in Research

If we are doing research right, we will have ups and downs. If we have no ups, then we need mentoring guidance or we need to go into another research area. If we have no downs, then we are not taking enough risks or we are not asking meaningful enough questions. Again, we need to be careful to not take either personally. We need to learn from our ups and downs, including how to progress in both situations. We also need to encourage others through this process.

Responding to Criticism and Compliments

We all have to learn which feedback to listen to and which to ignore. We need both humility (which is not the same thing as insecurity) and confidence. We should learn from critical feedback when possible but not take it personally (the same is true

for compliments). A crucial skill is to learn how to give useful feedback in our review processes: don't make it personal.

Let me give an example (since I am a musician) of the composer Jean Sibelius and his Eighth Symphony. Finnish composer Jean Sibelius (1865–1957) was widely regarded as his country's greatest composer, but his perfectionism and self-doubt, combined with both extremely positive and extremely negative criticism (including harsh comparisons with Arnold Schoenberg) from critics, resulted in him being unable to move forward creatively. As a consequence, he died before completing his Symphony No. 8 after many years of working on it.

So, it's important that we can find ways to manage ups and downs, both criticisms and complements, have fun and continually improve.

The Role of Critical Thinking

The steps of critical thinking are basically as follows:

- Identify the question, problem, or goal
- Identify gaps in knowledge to be filled
- Gather the needed information and data, ensuring appropriate representativeness and diversity of perspectives, and avoiding bias and checking errors (rigor)
- Analyze and evaluate, repeating above as needed
- Distill conclusions and disseminate results

What is our role in critical thinking? We should ensure rigorous critical thinking in our own fields, and we should assist collaborators in other fields in the appropriate use of our results and tools.

Statistics is the science of the scientific method… and the scientific method is a form of critical thinking. We should advocate for universal critical thinking skills and training in every sector of society.

IMS Presidential Address continued

Who Decides the Important Questions?

Michel Talagrand received the 2024 Abel Prize for his "groundbreaking contributions to probability theory and functional analysis, with outstanding applications in mathematical physics and statistics." His advice on this question—from his acceptance speech for the 2019 Shaw Prize—was this:

"I wish I could say that I had a grand vision of mathematics but the reality is very different. I know little mathematics. I simply tried solving problems which came my way, always attempting to go to the bottom of things. I did not work on fashionable areas, but I focused on simple universal structures because there lay important questions. I owe a great debt to Gilles Pisier, Vitali Milman, and others, who introduced me to the areas where I became the most successful. Modern science

Michel Talagrand

Peter Badge / Typos1 / Abel Prize 2024

is like a magnificent temple in perpetual construction. I am proud I could contribute one small brick to its foundations." (see https://michel.talagrand.net/S.pdf)

So, this underscores the importance of curiosity, humility, collaboration, and mentoring.

DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

Let's move to a new topic, Data Science (DS) and Artificial Intelligence (AI). We in the IMS disciplines are central to this, but what should we (IMS) do about it? What about conferences and publications? We have recently established an IMS ad hoc committee on Machine Learning and Artificial Intelligence, co-chaired by Xihong Lin (Harvard) and Andrew Gordon Wilson (NYU Courant).

Should we follow or lead? We do both now, but we should lead more.

The positives and negatives of AI are being widely discussed. Consider The Bad first. AI could rule the world. AI could supplant and surpass all human knowledge and creativity. AI could increase social inequalities, biases and contention. AI could enable humans to stop growing intellectually and stop thinking for themselves.

But there's also The Good: AI could help us do better with hard tasks. AI could help us learn more effectively, and more fully achieve our intellectual potential. And AI could help us be fairer and more inclusive.

What unique strengths can we bring to AI? IMS researchers should be involved in any and all aspects of AI for which our perspective can be helpful, for example: the underlying theoretical foundations; performance guarantees; applications; better algorithms… Anything which does, could, or should involve probability, foundations, data analysis, inference about the real world, etc. We may also need to learn more in computer science and in other areas.

GOING FORWARD

In closing, I would like to thank you all for your many important contributions to science, mathematics, society and to the IMS itself. Thank you for the privilege of being able to be a part of this important work.

Please feel free to reach out to me and the other leaders of IMS with any suggestions. Please let us know if you want to volunteer. I wish you all success and fulfillment in your careers.
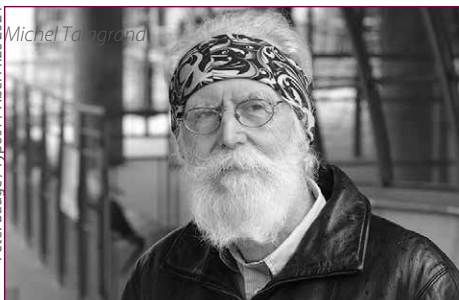
# Nominations due November 1 for new IMS Zelen award

The IMS Thelma and Marvin Zelen Emerging Women Leaders in Data Science Award

NEW for 2024

This new IMS award will be given annually to **three women data scientists who are within 10 years of completing their PhD (or similar degree)** during the year of the award. The inaugural award, consisting of a plaque, a citation, and a cash honorarium, will be presented at the IMS Presidential Awards Ceremony held at the 2025 IMS Annual Meeting, at JSM Nashville. The deadline for nominations is **November 1**. For more information and to submit your nomination, please visit:
https://imstat.org/ims-awards/ims-thelma-and-marvin-zelen-emerging-women-leaders-in-data-science-award/

Thelma and Marvin Zelen
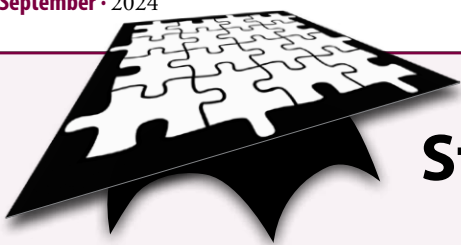
Student Puzzle Corner 52

A quick reminder of Anirban DasGupta's puzzles from the previous issue:

Puzzle 52.1 For $n \geq 2$, let σ denote a permutation of $\{1, 2, \ldots, n\}$. Call a pair (i, j) a reversal pair of σ if $i < j$, $\sigma(i) > \sigma(j)$. Denote by $I(\sigma)$ the set of all reversal pairs of σ, and by $T(\sigma)$ the cardinality of $I(\sigma)$. Find the expected value of $T(\sigma)$ if σ is chosen uniformly at random from the set of $n!$ permutations of $\{1, 2, \ldots, n\}$.

Puzzle 52.2 For our contest problem, answer True or False, without the need to provide a proof. But reasoned answers are especially welcome. Each correct answer receives 3 points, each incorrect answer gets -2 points, unanswered ones get -1 point.

(a)   If $X \sim N_d(\mu, \mathbf{I})$, then the only function $h(X)$ such that $E_\mu (h(X)) = h(\mu)$ for all μ is $h(X) = X$.

(b) There exist real, valued, nonconstant random variables X, Y such that X, Y are independent, and $\frac{X}{Y}$ and XY have the same distribution.

(c) Suppose G is a graph on n vertices and m edges. A coloring of G is an assignment of colors to the vertices of G in such a way that no two vertices that share an edge receive the same color. Fix an integer x and denote by $P_G(x)$ the number of ways to color G by using exactly x colors. View $P_G(x)$ as a polynomial in a real variable x (you can). Then the sum of all the roots of $P_G(x)$, counting possible complex roots, does not depend on n.

(d) If X is a real valued random variable with (finite) variance σ^2 and a median ξ (any median), then $|E(X) - \xi| \leq \sigma$.

(e) Suppose $(X_1, X_2, \ldots, X_{100})$ is distributed uniformly on the boundary of the unit ball in 100 dimensions. Then the joint distribution of the first 10 coordinates, $(X_1, X_2, \ldots, X_{10})$ can be approximated by a suitable 10-dimensional normal distribution with a diagonal covariance matrix.

Student members of IMS are invited to submit solutions to bulletin@imstat.org (subject "Student Puzzle Corner"). If correct, we'll publish your name (and photo, if there's space), and the answer, in the next issue.
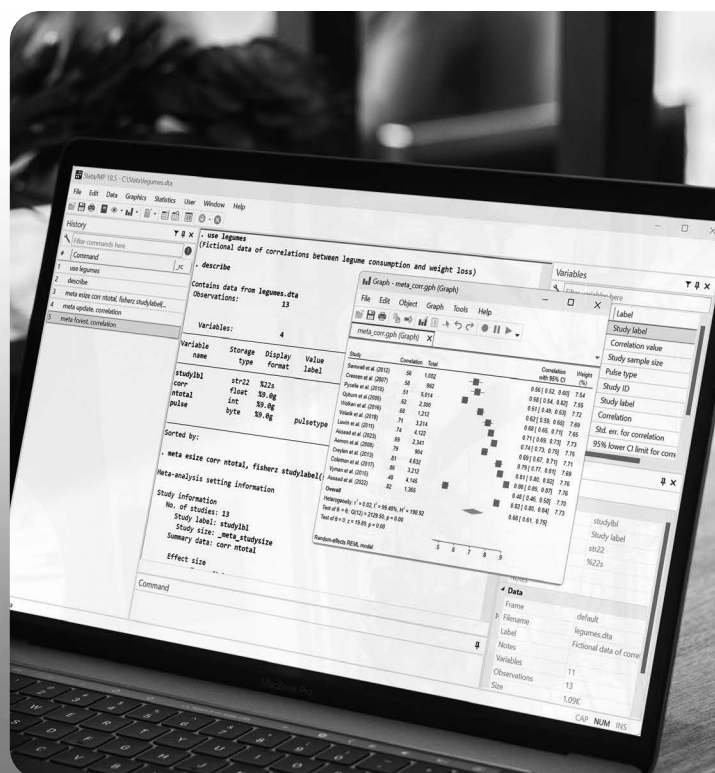
The Puzzle Editor is Anirban DasGupta. His decision is final.

Meeting Reports

Pre-Meeting for Young Researchers of the BS–IMS World Congress 2024

The Pre-Meeting for Young Researchers of the BS–IMS World Congress 2024 took place from August 10–11 at Campus Essen of the University of Duisburg–Essen. The meeting hosted over 90 PhD students and postdocs with backgrounds in statistics, probability and data science. The program featured a scientific day with lectures by Emmanuel Candès, Remco van der Hofstad and Susan Murphy, and a career day with several panels and workshops on diversity, career planning and the publishing process. More than 30 young researchers also presented their work in two poster sessions.

During the event, the participants [*below*] were extremely engaged in the discussions and happily used the opportunity to connect with each other and with the world-renowned speakers. Among other things, they particularly appreciated the quality of the lectures and the opportunity to learn from the panel members' personal experiences in academia.

The meeting was generously supported by the Bernoulli Society and the IMS, with additional funding from the DMV-Fachgruppe Stochastik and the Faculty of Mathematics at University of Duisburg–Essen. This funding supported eight scholarships for young researchers from low-income countries and the accommodation of more than 50 participants.

The organizers were Mona Azadkia, Thomas Berrett, Axel Buecher, Andressa Cerqueira, Imma Curato, Sebastian Engelke, Zhenhua Lin, and Anita Winter.

See the program and abstracts at https://www. bernoulli-ims-worldcongress2024.org/young-researchers-pre-meeting.

SAM 2024: the Statistical Analyses of Multi-Outcome Data

The Fifth International Workshop on the Statistical Analyses of Multi-Outcome Data (SAM 2024) was successfully held on July 9–10, 2024, in the picturesque city of Salzburg, Austria. This year's workshop, co-sponsored by the University of Salzburg, attracted 130 registered participants, setting new records for SAM workshops. It featured two plenary talks delivered by Professors Ian McKeague and Markus Pauly; twenty-four invited sessions covering topics such as joint models of multiple outcomes, precision medicine, machine learning and artificial intelligence, and the analysis of complex data including metagenomics, neuroimaging, and high-dimensional and heterogeneous data; as well as eight contributed sessions providing a platform for emerging researchers. The website containing all the talk information is available at https://sam-workshop.github.io/ SAM_2024/.

Junior researcher awards were given to Zhichen Xu (top place), Jonas Beck (second place), and Daniel Phillips (honorable mention). Generous donations by the International

Biometric Society's Austria/Switzerland Region and InflaRx supported the plenary sessions and the junior researcher awards. Thanks also to the ASA Lifetime Data Science Section, Institute of Mathematical Statistics, International Chinese Statistical Association, and the Academy of Clinical Research and Study for co-sponsoring the event. Special thanks to Ruiwen Zhou for website design and to the local team with Andrea Baumgartner, Jonas Beck, and several others for their administrative assistance.

SAM 2026 is planned for July 2026 in Bordeaux, France, co-sponsored by the University of Bordeaux. Looking forward to seeing you there!

Lei Liu, on behalf of the SAM 2024 Program Organizing Committee: Arne Bathke, Lei Liu (chair), Peter X. K. Song, and Yichuan Zhao.

ISNPS 2024: the 6th International Symposium on Nonparametric Statistics

Following the successful ISNPS conferences in Chalkidiki, Cádiz, Avignon, Salerno, and Paphos, the 6th International Symposium on Nonparametric Statistics took place in Braga, Portugal, from June 25–29. The meeting was organized by the Centro de Matemática of the Universidade do Minho, and co-sponsored by the IMS and the Bernoulli Society for Mathematical Statistics and Probability. The venue of the conference was Altice Forum Braga, a modern convention center near the center of the city of Braga, in northern Portugal.

The opening ceremony of ISNPS 2024 was chaired by the President of the School of Sciences at the Universidade do Minho, José Manuel González Meijome. In the ceremony, the representative for the ISNPS Working Group of the IMS was Ursula Müller, while the City of Braga was represented by the Councilwoman for Education, Carla Sepúlveda. Inês Sousa (Universidade do Minho) and Jacobo de Uña-Álvarez (Universidade de Vigo) joined the ceremony as conference co-chairs. All of

ISNPS 2024 opening ceremony: Inês Sousa, José Manuel González Mejome, Carla Sepúlveda, Ursula Müller and Jacobo de Uña-Álvarez

them welcomed the attendees, encouraging them to take advantage of the meeting and to enjoy Braga and its surroundings.

The 6th ISNPS put together recent advances and trends in many areas of nonparametric statistics, including statistical learning, Bayesian nonparametrics, functional data analysis, high-dimensional data, goodness-of-fit, Survival Analysis, nonparametric econometrics, multiple testing or extremes. With seven plenary talks, 239 invited talks organized in 60 invited paper sessions, 78 contributed talks, 20 poster presentations, and almost 400 participants from all over the world, the symposium was a perfect place to facilitate the exchange of research ideas, promote collaborations and contribute to the further development of the field of nonparametric statistics.

The plenary talks focused on the hottest topics in nonparametric and semiparametric statistics: smoothing methods by Irène Gijbels (KU Leuven), causality and machine learning by Peter Bühlmann (ETH Zürich), fast algorithms for neural networks by Andrew Barron (Yale), deep learning in censored data analysis by Jane-Ling Wang (UC Davis), Bayesian biostatistics by Peter Mueller (UT Austin), goodness-of-fit testing by Wenceslao González-Manteiga (Santiago de Compostela), and bootstrap for macroeconomics by Silvia Gonçalves (McGill). The audience greatly enjoyed these lectures, which were followed by fruitful discussions.

The social programme included four organized tours through the symbolic sites in Braga, and a gala dinner at the exquisite Migaitas Forum restaurant.

All the information related to the conference, including the book of abstracts, is still available at https://w3.math.uminho.pt/ISNPS2024/

At the welcome dinner, left to right: Andrew Barron, Jane-Ling Wang, Peter Mueller, Jacobo de Uña-Álvarez, Gautami Shah (Peter Mueller's wife), Wenceslao González-Manteiga, and Irène Gijbels

As for previous ISNPS conferences, the *Journal of Nonparametric Statistics* will launch a special issue on the occasion of the 6th International Symposium on Nonparametric Statistics. The special issue aims to publish on a fast track high quality papers on cutting-edge methods in nonparametric and semiparametric statistics presented at the conference. The review process will follow the general reviewing principles of the journal, and submissions are possible until September 30, 2024. More information is available at https://think.taylorandfrancis.com/special_issues/isnps2024/. All contributors to ISNPS 2024 are strongly encouraged to enhance the visibility and success of the conference by submitting their papers to the special issue.

During the ISNPS General Assembly that took place on the second day of the conference, Thessaloniki (Greece) was announced as the venue for the next symposium. The ISNPS 2026 conference dates will be June 22–26. That will be a new opportunity for the ISNPS Working Group to keep on growing!

Written by Inês Sousa and Jacobo de Uña-Álvarez, ISNPS 2024 co-chairs.

A bustling coffee break at the conference venue, Altice Forum Braga

Radu's Rides: **Pseudo-random Summer Thoughts**

Contributing Editor Radu Craiu (Department of Statistical Sciences, University of Toronto) took the opportunity to reflect during his "summer intermezzo":

Constrained by circumstances, this was a summer of relative stagnation, at least in terms of spatial displacement. Toronto being the lovely city that it is, I still managed to get a tan and produce some random thoughts vaguely related to statistics. Not having a vacation also meant that I got to think about past ones and, to no one's surprise, I started daydreaming not about concrete jungles and modern means of transportation, but rather places and objects that seem to have traveled (forward) in time. It's not the fast trains, the internet speed, or the height of buildings that move me during summer intermezzos, but rather the artistry of the past and the (almost) forgotten crafts that were used to build and adorn a city like Venice. There is a wealth of know-how buried in that lagoon and there is a lot of careful thinking, both theoretical and empirical, that led to what stands above ground. Especially there, within the enormous constraints those artists had to deal with (water, shifting ground, some wars, the plague, more water) I find some similarity with our own profession.

Working under constraints is well-known to statisticians who often must navigate data shortcomings, modelling challenges, theoretical conundrums, and computational mountains. This is not recent and is not going away. In many ways, our ideas were developed under historical constraints that enriched our arsenal and today bring us closer to the artisans of yesteryear. Sure, the black boxes of today have liberated thinking and modelling to the point one feels sometimes like they were kidnapped, and have increased the production of algorithms and specialized applications to levels that appear intellectually unsustainable. However, there is more than nostalgia that redirects me to statistical thinking and its enormous value to some of today's problems. I am convinced that when the need for building a new "intellectual Venice" will occur, statisticians will play an important role in saving the day. Constraints will always exist, whether we like it or not, so those who grew up thinking of them will be useful. So, whenever your reasoning seems trumped by the latest wave of artificial intelligence, remember the artisans of yesteryear and wait for time to tell the truth.

The reason Venice popped in my head is due to its hosting of the ISBA World Meeting in July (https://www.unive.it/web/en/2208/home). Speaking of working successfully under constraints, the University Ca'Foscari of Venice was a lovely host to a large group of Bayesians. When one witnesses a successful conference, there are always lingering questions closely related to envy: Can this be replicated here? How did they do it so well? Before you shout, "Venice, duh!" note that having a beautiful setting is not enough, as one could easily envision situations where the outside looks better than the inside and the proceedings are left desolate. Behind every great conference there is a magic mix that is hard to dissect but is easily recognizable, and ISBA in Venice had it. It certainly helped that Italian cuisine and those tiny, delicious, espressos were available during lunches, that the organizers went to great lengths to secure childcare options for the participants, or that a diverse and interesting program properly reflected the many facets of a thriving Bayesian community.

Since we don't teleport anywhere yet, I still had to deal with airplanes and carry-on suitcases. There is not a single recent flight I have been on where the latter can still fit in the former. This seems to be a problem whose solution should be the offspring of geometry and statistics. It also makes one wonder where else in society decision makers should have a solid grasp of statistics, or at least be aware of what statistics can do for us. Speaking on behalf of all those stuck in endless traffic jams in cities that are subjected to simultaneous repairs and constructions, I must say that an urban planner without statistical training is a living, breathing danger to their fellow humans. Similarly, the head of any public transportation network needs to understand that efficiency and stochasticity are two sides of the same coin, and one cannot be achieved without understanding the other. These are obvious demands, but it is not hard to make the case that hospital managers (in fact, managers of any large institution where there is a flow of goods going in and out: ski/beach resort operators, event organizers, the list goes on) must all know statistics or a statistician who can help them with the chaos. Teaching some stats in business schools notwithstanding, I am going to end by repeating what I wrote elsewhere: the minds of future leaders must be captured by statistics at an early age, probably before high school ends, so that by the time they need to deal with whatever stinky matter hits the fan, they have already developed the reflex to reach out to statistical tools to clear the air.

It takes more than a beautiful venue like Venice to make a successful conference…

2024 ISBA World Meeting
International Society for Bayesian Analysis

Recent papers: two IMS journals

Annals of Probability

The *Annals of Probability* publishes research papers in modern probability theory, its relations to other areas of mathematics, and its applications in the physical and biological sciences. Emphasis is on importance, interest, and originality—novelty and correctness are not sufficient for publication. The Co-editors are Paul Bourgade and Julien Dubedat.
Access papers at: **https://projecteuclid.org/aop**

Volume 52, number 5, September 2024

Annals of Applied Probability

The *Annals of Applied Probability* aims to publish research of the highest quality reflecting the varied facets of contemporary Applied Probability. Primary emphasis is placed on importance and originality. The Co-editors are Kavita Ramanan and Qi-Man Shao.
Access papers at: **https://projecteuclid.org/aoap**

Volume 34, number 4, August 2024

IMS meetings around the world

Joint Statistical Meetings

2025 Joint Statistical Meetings
August 2–7, 2025, Nashville, USA

w https://ww2.amstat.org/meetings/jsm/2025/

Including the 2025 IMS Annual Meeting. The topic is "Statistics, Data Science and AI Enriching Society."

Invited Session Proposal submission deadline September 5, 2024.
Short Course Proposal submission deadline September 30, 2024.
Computer Technology Workshop Proposal submission deadline January 15, 2025.
Topic-Contributed Session Proposal submissions: November 14 – December 9, 2024.
Contributed Abstract submission: December 2, 2024 – February 3, 2025.
Registration & Housing reservations open May 1, 2025.

JSM dates for 2026–2030

JSM 2026	**IMS Annual Meeting**	**JSM 2028**	**IMS Annual Meeting**	**JSM 2030**
August 1–6, 2026	**@ JSM 2027**	**August 5–10, 2028**	**@ JSM 2029**	**August 2028 [dates**
Boston, USA	**August 7–12, 2027**	**Philadelphia, USA**	**August 4–9, 2029**	**and location TBC]**
	Chicago, USA		**Seattle, USA**	

ICMS25: the 4th International Conference on Mathematics and Statistics
February 20–22, 2025
Sharjah, United Arab Emirates

w https://www.aus.edu/conferences/the-fourth-international-conference-on-mathematics-and-statistics

The fourth International Conference on Mathematics and Statistics (ICMS25) at American University of Sharjah aims to provide a platform for those engaged in the realm of pure and applied mathematics, mathematical education and statistics. This conference serves as a venue for the exchange of the latest research insights and for networking among scholars and practitioners.

ICMS25 will include keynote addresses from distinguished mathematicians, specialized sessions and contributions of papers, with selected publications in internationally refereed journals.

The technical program will feature three keynote lectures delivered by esteemed scholars and special sessions focusing on areas such as algebra, coding theory, data mining, machine learning, differential equations, mathematical biology and topology. Additionally, there will be contributed paper sessions with oral and poster presentations.

Abstract submission is open: deadline October 31, 2024. See website for abstract template.

2026 IMS Asia Pacific Rim Meeting (IMS–APRM)
June 13–16, 2026
Hong Kong, ROC

w TBC

The IMS Asia Pacific Rim (IMS-APRM) conferences provide an excellent forum for scientific communications and collaborations for researchers in Asia and the Pacific Rim, and promote communications and collaborations between researchers in this area and those from other parts of the world.

The 2026 Local Organizers are Xinyuan Song and Junhui Wang.

More details coming; please mark your calendars.

More IMS meetings

Myles Hollander Distinguished Lecture: Robert E. Kass *NEW*
October 4, 2024
Tallahassee, FL, USA and online
w https://stat.fsu.edu/hollander-distinguished-lectureship-2024
The Department of Statistics at Florida State University is pleased to
announce that **Robert E. Kass**, the Maurice
Falk University Professor of Statistics
and Computational Neuroscience in the
Department of Statistics and Data Science,
the Machine Learning Department and the
Neuroscience Institute at Carnegie Mellon
University, is the 2024 Myles Hollander
Distinguished Lecturer.

Rob Kass will present "Reasoning from
Data in Science," at 11 a.m., Friday, Oct. 4, 2024, on FSU's Tallahassee
campus. The live talk will also be accessible via Zoom.

For more information and to register for the virtual
talk, visit stat.fsu.edu/HollanderLecture.

[Read more about Rob Kass in the members' news
section, on page 3.]

National Academy of Sciences

ENAR 2025 Spring Meeting
March 23-26, 2025
New Orleans, LA, USA
w https://www.enar.org/meetings/spring2025/
The ENAR 2025 Spring Meeting will be held March
23-26, 2025 at the Sheraton New Orleans Hotel in New
Orleans, Louisiana. The 2025 meeting theme is "ENAR is
Interdisciplinary."

Deadlines: Distinguished Student Paper submission
open September 3–October 3, 2024. Contributed Session
Proposal submission: September 3–October 17, 2024.

44th Conference on *UPDATED*
Stochastic Processes and their Applications 2025
July 14–18, 2025
Wrocław, Poland
w https://spa.pwr.edu.pl/
The 44th Conference on Stochastic Processes and their
Applications (SPA 2025) will be held in Wrocław, Poland,
from 14 to 18 July, 2025.

SPA Conferences, organised by the Bernoulli Society
and co-sponsored by IMS, are the most important series of
international meetings on the theory and applications of
stochastic processes.

Organizing committee members are Krzysztof Bogdan
(Wrocław University of Science and Technology) and
Krzysztof Dębicki (University of Wrocław).

You can pre-register at https://spa.pwr.edu.pl/
preregistration.

44th Conference on Stochastic Processes and their Applications

14-18 July 2025
Wrocław

spa.pwr.edu.pl

Invited Speakers:
Benoit Collins
Alessandra Faggionato
Thomas Hutchcroft
Tomasz Komorowski
Florence Merlevède

Roberto Imbuzeiro Oliveira
Ron Peled
Sunder Sethuraman
Justin Salez
Cristina Toninelli
TBA

Chair of Scientific Committee:
Pablo Ferrari

Organizers:
Krzysztof Bogdan
Krzysztof Dębicki

Wrocław University of Science and Technology

Bernoulli Society for Mathematical Statistics and Probability

Uniwersytet Wrocławski

More IMS meetings

IMS International Conference on Statistics and Data Science (ICSDS2024)
UPDATED
December 16–21, 2024
Nice, France
w https://www.ims-icsds2024.org/home [*note new website URL*]
Student Travel Awards and Junior Researchers Travel Support available
The 2024 IMS International Conference on Statistics and Data Science (ICSDS), which will take place December 16–19, 2024, in Nice, France, will provide 14 travel awards, 800USD each, to **PhD students who participate in the invited or contributed program**: apply by **September 9**. See https://www.ims-icsds2024.org/travel-award.

In addition, to ensure inclusivity and accessibility of ICSDS to junior researchers from all over the world, IMS is pleased to offer a **travel support fund for junior faculty members and post-doctoral researchers who do not have other forms of institutional support** for their travel and registration cost. This fund is generously sponsored by the Industry Friends of IMS (https://imstat.org/industry-friends-of-ims-ifoims/). Apply via https://www.ims-icsds2024.org/travel-award. The deadline is **October 30**.

The ICSDS will feature many outstanding invited speakers from different countries and continents, covering a wide range of subjects in statistics and data science, in theory, methodology and applications, including four plenary speakers (**Rina Foygel Barber**, University of Chicago; **Peter Bühlmann**, ETH Zürich; **Cynthia Dwork**, Harvard University; and **Martin Wainwright**, Massachusetts Institute of Technology).

Registration is open now (https://www.ims-icsds2024.org/registration), with the early registration fees expiring September 25.

The conference hotel is available for booking at a special rate, see this https://www.ims-icsds2024.org/accommodation.

Asia-Pacific Seminar in Probability and Statistics
Ongoing and online
w https://sites.google.com/view/apsps/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.

Bernoulli–IMS 12th World Congress in Probability & Statistics
NEW
July 24–28, 2028. Singapore
w TBC
The Institute of Mathematical Statistics annual meeting will be held at the 12th Bernoulli–IMS World Congress in Probability and Statistics, in Singapore. Details to follow.

One World ABC Seminar: Ongoing and online
w 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/
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/mailing-list

Other meetings and events around the world

Stochastic Networks Conference
June 15–19, 2026
Chicago, USA

w https://www.chicagobooth.edu/events/stochastic-networks-conference

The purpose of the stochastic networks conference is to bring together mathematicians and applied researchers who share an interest in stochastic network models. The 2026 stochastic networks conference, hosted by the University of Chicago Booth School of Business, will be the 16th in a series of conferences initiated in 1987.

The 2026 conference will be sponsored by the Operations Management Group at the University of Chicago Booth School of Business, and will be held in the heart of downtown Chicago at Gleacher Center. During the 2026 conference, you can enjoy Chicago's culinary and brewery scenes, street festivals, and museums as spring turns into summer in our amazing metropolis.

For questions, contact the local organizing committee: Amy R. Ward (Chair: Amy.Ward@chicagobooth.edu), René Caldentey, John Birge, or Baris Ata.

CIRM Meeting: New challenges in high-dimensional statistics
December 16–20, 2024
Luminy, France

w https://conferences.cirm-math.fr/3055.html

This second conference of the 2023–2025 series of conferences will highlight recent theoretical advances in inference for high-dimensional statistical models based on the interplay of techniques from mathematical statistics, machine learning and theoretical computer science.

The importance of high-dimensional statistics is due to the increasing dimensionality and complexity of models needed to process and understand modern data. Meaningful inference about such models is possible assuming suitable lower dimensional underlying structure or low-dimensional approximations, for which the error can be reasonably controlled. Examples of such structures include sparse high dimensional regression, low rank matrix models, dictionary learning, network models, latent variable models, topic models, and others.

Tutorials will be given by Johannes Schmidt-Hieber (University of Twente) and Rina Foygel Barber (University of Chicago)

Pre-registration is open now at the website above.

IMA Mathematics Anxiety International Conference
June 24–26, 2025
Cambridge, United Kingdom

w https://ima.org.uk/24021/ima-mathematics-anxiety-international-conference/

The 1st IMA Mathematics Anxiety International Conference will take place at the Centre for Mathematical Sciences, the University of Cambridge, in the heart of the historical city. It aims to bring together researchers, academics, teachers, publishers, policy makers and all interested in the conference theme from all over the world. We envisage a number of themes including:

1. Mathematics anxiety reported by non-specialists i.e., students studying disciplines other than mathematics
2. Gender and other dimensions to mathematics anxiety
3. Concepts linked to mathematics anxiety such as negative emotions, unfavourable attitudes, motivation, communication, self-efficacy, mathematical self-concept, resilience to failure, and autonomy
4. Precursors and impacts of mathematics anxiety
5. Communicating and teaching quantitative courses such as mathematics, statistics, research methods and operational research
6. Pedagogical interventions to support mathematics anxiety sufferers such as blended learning, mindset interventions, those designed to enhance self-efficacy, student-led education, and student-voice
7. Interventions such as brain stimulation
8. Promoting equity, inclusion and diversity (EDI), in mathematics education

Proposals for Mini-symposium

A mini-symposium is a session on a specialist topic, consisting of three to four 20-minute relevant talks. You would be responsible for organising deadlines and contributions. If you are interested in holding a mini-symposium then please fill out the form with a proposed title and abstract of less than 300 words: https://forms.gle/ZeqEyfK3FENutPHs5 Submission deadline 20 November, 2024.

Call for Presentations and Posters – Submissions from 1 August

Present your latest original ideas and results in mathematics anxiety. Submit an abstract of less than 300 words including your main ideas and results, their context, and appropriate references. Abstracts should be submitted through your MyIMA account (https://my.ima.org.uk/). You do not have to be an IMA member to submit an abstract. Deadline: 3 February, 2025.

More meetings and events around the world

International Day of Women in Statistics and Data Science

October 8, 2024

A free, virtual 24-hour conference, hosted by the Caucus for Women in Statistics and Data Science

idwsds.org

The Caucus for Women in Statistics and Data Science will host the **Third Annual International Day of Women in Statistics and Data Science** (http://www.idwsds.org/) on October 8, 2024, all day (in UTC time) to celebrate women statisticians and data scientists around the world. The theme this year is *Empowering the Next Generation of Women Statisticians and Data Scientists.*

We invite you to be part of a transformative movement! Last year, the International Day of Women in Statistics and Data Science (IDWSDS), held on October 10, 2023, was an extraordinary celebration of knowledge, diversity, and empowerment. Our event had a global reach, with 24 hours of virtual conference that transcended borders, uniting professionals from 22 different countries across six continents. There were 72 speakers who are trailblazers, visionaries, and experts. They delved into topics ranging from the rich history of women in statistics to the intricacies of classical and Bayesian statistics. With 980 registrations from 60 countries, our conference exemplified true global solidarity. Around 350 attendees actively engaged, exchanged ideas, and forged connections.

Women are often minorities in statistics and data science. IDWSDS highlights the pressing need for more opportunities, mentorship, and recognition. We are help provide a brighter future for women in these fields.

The aims of the virtual conference continue to be:

- Showcasing women and their contributions to the fields
- Connecting women statisticians and data scientists around the world
- Encouraging collaborations among statistical societies around the world
- Prompting statistics and data science to become more inclusive and diverse
- Bridging the fields of statistics and data science

Please register to join this celebration: www.idwsds.org/registration/. Email idwsds@cwstat.org and follow updates on Twitter.

By supporting IDWSDS, you become a catalyst for change—a force that amplifies the voices of women in statistics and data science. Join us as we pave the way for innovation, collaboration, and empowerment within our global community.

24th European Young Statisticians Meeting
July 21–25, 2025
Collegio Carlo Alberto, Turin, Italy
w https://sites.google.com/view/eysmtorino2025/home
The European Young Statisticians Meetings are held every two years under the auspices of the European Regional Committee of the Bernoulli Society. The aim is to provide a scientific forum for the next generation of European researchers in probability theory and statistics.

Announce your meeting!

Announce it as early as you can, ideally as soon as you have a date and location. You can always add in the details later on.

Submit the information to
imstat.org/ims-meeting-form/

Employment Opportunities

Austria: Vienna

Faculty of Business, Economics and Statistics the University of Vienna

Full Professor of Statistics and Econometrics

https://jobs.imstat.org/job//74674401

Austria: Klosterneuburg

Institute of Science and Technology in Austria

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

https://jobs.imstat.org/job//70543325

Singapore:

Nanyang Technological University

Assistant Professor/Associate Professor in Mathematics Education

https://jobs.imstat.org/job//74892184

United States: Berkeley, CA

University of California Berkeley

Assistant/Associate/Full Professor - Cluster Hire in Artificial Intelligence, Inequality, and Society

https://jobs.imstat.org/job//74635789

United States: Davis, CA

Mathematics

Tenure-track Assistant Professor

https://jobs.imstat.org/job//74677584

United States: Fort Collins, CO

Colorado State University

Statistical Consultant Research Associate II/III

https://jobs.imstat.org/job//74618439

United States: Chicago, IL

The University of Chicago Booth School of Business

Assistant/Associate Professor of Econometrics and Statistics

https://jobs.imstat.org/job//74790045

United States: Ann Arbor, MI

University of Michigan

Tenure-Track Assistant Professor

https://jobs.imstat.org/job//74592453

United States: Rolla, MO

Missouri University of Science and Technology

Kummer Endowed Full or Associate Professor

https://jobs.imstat.org/job//74495285

United States: Greenville, NC

East Carolina University

Assistant Professor, Associate Professor

https://jobs.imstat.org/job//74879898

United States: Los Alamos, NM

Los Alamos National Laboratory

R&D Manager / Group Leader

https://jobs.imstat.org/job//74640709

United States: Rochester, NY

Rochester Institute of Technology

Lecturer in Mathematics and Statistics

https://jobs.imstat.org/job//74619381

United States: Rochester, NY

Rochester Institute of Technology

Visiting Lecturer in Mathematics and Statistics

https://jobs.imstat.org/job//74698482

United States: Bryn Mawr, PA

Bryn Mawr College

Assistant Professor of Mathematics

https://jobs.imstat.org/job//74492189

International Calendar of Statistical Events

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

Online and Ongoing series

ONLINE ![ims] **Asia-Pacific Seminar in Probability and Statistics w** https://sites.google.com/view/apsps/home

ONLINE ![ims] **COPSS–NISS COVID-19 Data Science Webinar series w** https://www.niss.org/COPSS–NISS-covid-19-data-science-webinar-series

ONLINE ![ims] **One World ABC Seminar w** https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar

ONLINE ![ims] **One World Probability Seminar w** https://www.owprobability.org/one-world-probability-seminar

ONLINE ![ims] **One World YoungStatS Webinar series w** https://youngstats.github.io/categories/webinars/

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

September 2024

September 2–5: Brighton, UK. **Royal Statistical Society 2024 International Conference w** https://rss.org.uk/training-events/conference-2024/

September 2–6: Poprad, Slovakia. **LinStat 2024 w** https://linstat2024.science.upjs.sk/

September 4–5: Birmingham, UK. **Unlocking the potential: The IMA AI/ML Congress 2024 w** https://ima.org.uk/23193/unlocking-the-potential-the-ima-ai-ml-congress-2024/

September 8–13: Ascona, Switzerland. **Spatial and Temporal Statistical Modeling in Molecular Biology w** https://spatialbio.net

September 11–13: Bath, UK. **4th IMA Conference on Inverse Problems from Theory to Application w** https://ima.org.uk/23503/4th-ima-conference-on-inverse-problems-from-theory-to-application/

September 12–13: Washington DC, USA. **Information, Value, Modeling and Inference w** https://www.american.edu/cas/economics/info-metrics/workshop/information-value-modeling-inference.cfm

September 16–17: Cambridge, UK. **Induction Course for New Lecturers in the Mathematical Sciences 2024 w** https://ima.org.uk/24056/induction-course-for-new-lecturers-in-the-mathematical-sciences-2024/

September 16–December 13: IMSI, Chicago, USA. Long Program: **Statistical Methods and Mathematical Analysis for Quantum Information Science w** https://www.imsi.institute/activities/statistical-methods-and-mathematical-analysis-for-quantum-information-science/

September 18–20: Washington DC, USA. **International Total Survey Error Workshop (ITSEW) w** https://www.niss.org/events/international-total-survey-error-workshop-itsew

September 23–25: Koper (Capodistria), Slovenia. **Applied Statistics 2024 w** https://as.mf.uni-lj.si/

September 23–27: Ulm, Germany. **Fall School on Time Series, Random Fields and Beyond w** https://www.uni-ulm.de/mawi/mawi-stochastik/allgemeines/aktuelles/fall-school-time-series-random-fields-and-beyond-2024/

September 26–28: Montréal, Canada. **Conference on New Developments in Probability (CNDP) w** http://womeninprobability.org/CNDP.html

October 2024

⬩NEW⬩ October 4: Tallahassee, FL, USA, and online. **Myles Hollander Distinguished Lecture: Robert E. Kass w** https://stat.fsu.edu/hollander-distinguished-lectureship-2024

Have **you** spotted a meeting that's missing or listed incorrectly? *Please tell us!* Email bulletin@imstat.org.

ONLINE October 8 (24-hour program): **International Day of Women in Statistics and Data Science:** *"Empowering the Next Generation of Women Statisticians and Data Scientists"* **w** https://www.idwsds.org/

October 10–12: Evanston, USA. **Midwest Probability Colloquium** *(including Women in Probability lunch on Oct. 11)* **w** https://apps.math.northwestern.edu/mwp/

November 2024

November 4–6: Savannah, GA, USA. **31st Biopharmaceutical Applied Statistics Symposium (BASS XXXI) w** www.bassconference.org

November 11–13: Eindhoven, The Netherlands. **DDQCIII: Data-driven techniques in Operations Research w** https://www.ddqc.io

December 2024

ims December 16–21: Nice, France. **IMS International Conference on Statistics and Data Science (ICSDS) w** https://sites.google.com/view/ims-icsds2024/

January 2025

January 17–18: Gainesville, USA. **Winter Workshop: Computational Methods in Bayesian Statistics w** https://stat.ufl.edu/winter-workshop/2025-computational-methods-in-bayesian-statistics/

February 2025

ims February 20–22: Sharjah, United Arab Emirates. **ICMS25: the 4th International Conference on Mathematics and Statistics w** https://www.aus.edu/conferences/the-fourth-international-conference-on-mathematics-and-statistics

March 2025

March 3–May 23: IMSI, Chicago, USA. Long Program: **Uncertainty Quantification and AI for Complex Systems w** https://www.imsi.institute/activities/uncertainty-quantification-and-ai-for-complex-systems/

March 23–26: New Orleans, USA. **ENAR 2025 Spring Meeting w** https://www.enar.org/meetings/spring2025/

June 2025

June 23–27: Verona, Italy. **12th General AMaMeF conference w** https://sites.google.com/view/amamef2025/

July 2025

July 13–17: The Hague, The Netherlands. **65th ISI World Statistics Congress w** https://www.isi-wsc.org/

ims July 14–18: Wrocław, Poland. **Stochastic Processes and their Applications 2025 w** https://spa.pwr.edu.pl/

NEW July 21–25: Turin, Italy. **24th European Young Statisticians Meeting w** https://sites.google.com/view/eysmtorino2025/home

International Calendar *continued*

August 2025

August 2–7: Nashville, TN, USA. **IMS Annual Meeting at JSM 2025 w** ww2.amstat.org/meetings/jsm/2025/

June 2026

June 1–4: Washington DC, USA. **9th International Workshop in Sequential Methodologies (IWSM) w** https://www.american.edu/cas/iwsm2026/

June 13–16: Hong Kong, ROC. **IMS–APRM2026: IMS Asia Pacific Rim Meeting w** TBC

NEW June 15–19: Chicago, USA. **Stochastic Networks Conference w** https://www.chicagobooth.edu/events/stochastic-networks-conference

July 2026

July 6–9: Salzburg, Austria. **IMS Annual Meeting. w** TBC

August 2026

August 1–6: Boston, MA, USA. **JSM 2026 w** www.amstat.org/meetings/joint-statistical-meetings

August 2027

August 7–12: Chicago, USA. **IMS Annual Meeting at JSM 2027 w** www.amstat.org/meetings/joint-statistical-meetings

July 2028

NEW July 24–28: Singapore. **Bernoulli–IMS 12th World Congress in Probability and Statistics (including IMS Annual Meeting). w** TBC

August 2028

August 5–10: Philadelphia, USA. **JSM 2028 w** www.amstat.org/meetings/joint-statistical-meetings

August 2029

August 4–9: Seattle, USA. **IMS Annual Meeting at JSM 2029 w** www.amstat.org/meetings/joint-statistical-meetings

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, 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/
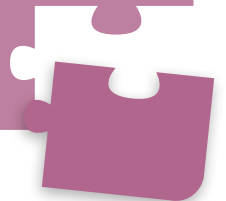
Membership and Subscription Information: 2024

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 $142 is added to the dues of members for each scientific printed journal selected ($95 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 2024 are available to the *Annals of Applied Probability*, *Annals of Applied Statistics*, *Annals of Probability*, *Annals of Statistics* ($257 for each title), *Statistical Science* ($210), and *IMS Bulletin* ($115). **General subscriptions** are for libraries, institutions, and any multiple-readership use. Institutional subscriptions for 2024 are available to *The Annals of Applied Probability, The Annals of Applied Statistics, The Annals of Probability,* and *The Annals of Statistics* (each title $590 online only / $770 print+online), *Statistical Science* ($340/$425), and *IMS Bulletin* ($185 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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Advertising job vacancies: A single 60-day online job posting costs just $370.00. 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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2: March	**February 1**	February 15	March 1
3: April/May	**March 15**	April 1	April 15
4: June/July	**May 1**	May 15	June 1
5: August	**July 1**	July 15	August 1
6: September	**August 15**	September 1	September 15
7: Oct/Nov *UPDATED*	**October 1**	**October 21**	**November 4**
8: December	**November 1**	November 15	December 1

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