Volume 53 • Issue 1

The members' magazine of the Institute of Mathematical Statistics

IMS Bulletin

January/February 2024

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ACM–IMS *Journal of Data Science* releases second issue

The ACM–IMS *Journal of Data Science* (*JDS*) is a joint journal of the Association of Computing Machinery (ACM) and the IMS, publishing high-impact research from all areas of data science, across foundations, applications and systems. The scope of the journal is multi-disciplinary and broad, spanning statistics, machine learning, computer systems, and the societal implications of data science. *JDS* accepts original papers as well as novel surveys that summarize and organize critical subject areas.

The second issue of the new journal is online now. Volume 1, issue 2 of *JDS* contains the following papers:

- "Identification and semiparametric efficiency theory of non-ignorable missing data with a shadow variable" by Wang Miao (Peking University), Lan Liu (University of Minnesota), Yilin Li (Peking University), Eric Tchetgen Tchetgen (University of Pennsylvania), and Zhi Geng (Peking University);
- "Optimistic Rates: A Unifying Theory for Interpolation Learning and Regularization in Linear Regression" by Lijia Zhou (University of Chicago), Frederic Koehler (Stanford University), Danica J. Sutherland (University of British Columbia; Alberta Machine Intelligence Institute), and Nathan Srebro (Toyota Technological Institute at Chicago;
- "Language Models in the Loop: Incorporating Prompting into Weak Supervision" by Ryan Smith (Snorkel AI), Jason A. Fries (Stanford University and Snorkel AI), Braden Hancock (Snorkel AI), and Stephen H. Bach (Brown University and Snorkel AI);
- "Principal Component Networks: Utilizing Low-Rank Activation Structure to Reduce Parameters Early in Training" by Roger Waleffe (University of Wisconsin–Madison) and Theodoros Rekatsinas (ETH Zurich).

The Editors-in-Chief of *JDS* are Jelena Bradic, Stratos Idreos, and John Lafferty. There are three submission deadlines per year: January 15, May 15, and September 15. You can read the papers, and find out how to submit *your* paper to the journal, at http://jds.acm.org/

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Journal of Data Science

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IMS Members' News

Tilmann Gneiting wins Ulf Grenander Prize


Tilmann Gneiting

The 2024 Ulf Grenander Prize in Stochastic Theory and Modeling is awarded to IMS Fellow **Tilmann Gneiting** for "seminal work in environmental and stochastic modeling, with applications to computational weather forecasting, and for research in probability theory and mathematical statistics." Gneiting is most widely known for foundational work on probabilistic forecasting. His two very highly cited 2007 papers have attracted considerable attention in the real-world weather forecasting community, including the European Centre for Medium-Range Weather Forecasts, with which Gneiting has conducted extensive research. "Gneiting's foundational work on statistical post-processing for numerical weather forecasts provides the basis for current practice worldwide," the citation noted.

Tilmann Gneiting is the scientific director of the Heidelberg Institute for Theoretical Studies (HITS) and professor of computational statistics at Karlsruhe Institute of Technology (KIT). Previously, he held faculty positions at the University of Washington and at Heidelberg University. He received his PhD in mathematics in 1997 from Bayreuth University under the supervision of Peter Huber. His research uses probability and statistics across a range of applications: spatial and spatio-temporal models, theory and practice of forecasting in contexts of atmospheric, environmental and earth sciences; epidemiology; economics; and finance. He is a Fellow of the IMS and ASA, and received the Distinguished Achievement Medal from the ASA section on Statistics and the Environment. He served as editor-in-chief of the *Annals of Applied Statistics*.

The $5,000 Ulf Grenander Prize is awarded every three years. Tilmann Gneiting's prize will be awarded at the American Mathematical Society's 2024 Joint Mathematics Meetings in San Francisco. Read more at https://www.ams.org/news?news_id=7234.

Sanat K. Sarkar honored at conference

The department of statistics, operations, and data science at Temple University hosted the **Conference on Advances in Multiple Testing**, which took place June 1, 2023, in honor of **Sanat K. Sarkar** for his 70th birthday and 40 years of service at Temple University. Sarkar has made fundamental contributions to the development of multiple testing methodology and its applications in modern scientific investigations. He is a fellow of the IMS and ASA, and an elected member of the International Statistical Institute. He has served on the editorial boards of leading statistical journals. Additionally, he was awarded the Musser Award for excellence in research by the Fox School of Business and inducted several times to the Dean's Research Honor Roll at Temple University.

Honor society Sigma Xi elects David Allison as 2023 Fellow

David Allison, IMS Fellow and dean of the Indiana University School of Public Health in Bloomington, was named a 2023 fellow of the Sigma Xi honor society. Since 2020, the scientific research honor society has selected peer-nominated scientists in recognition of their "exceptional contributions to the scientific enterprise." Founded in 1886, Sigma Xi promotes excellence in scientific investigation and encourages a sense of companionship and cooperation among researchers in all fields of science and engineering. It counts over 200 Nobel Prize winners among its membership. See https://www.sigmaxi.org/home.

Bhramar Mukherjee receives ASA Karl Peace Award

Bhramar Mukherjee of the University of Michigan was selected to receive the American Statistical Association's 2023 Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society, recognizing her commitment to and accomplishments in biostatistics on a global scale. While Mukherjee has worked in many areas of biostatistics, her research and leadership during the 2021 COVID surge in India brought her widespread attention. Mukherjee serves as chair of the biostatistics department at the Michigan School of Public Health, where she has been a professor of epidemiology and global public health since 2006. She was recently named a distinguished professor in recognition of her COVID research and team leadership, contributions to biostatistics generally, and diversity leadership. Read more at https://magazine.amstat.org/blog/2023/10/02/2023-karl-e-peace-award/

New NSF program director for statistics

Tapabrata (Taps) Maiti joined the US National Science Foundation's Division of Mathematical Sciences this fall as a rotator program director for statistics. Maiti is a foundation professor in the department of statistics and probability at Michigan State University, where he has served as the graduate director of statistics and was the founding co-director for the business and social analytics center. He is a fellow of the IMS, ASA and the American Association for the Advancement of Science. Maiti's research highlights skills and expertise in statistical theory and methods with a focus on application to real-life data. His interests include the foundation of statistics and data science and statistical learning theory for large and complex spatiotemporal data with biomedical applications. He has more than 100 publications in interdisciplinary journals and has received federal funding to support his research. Maiti has served on the editorial boards of leading statistical journals.

Maiti joins NSF statistics program directors **Yong Zeng**, **Jun Zhu**, and **Yulia Gel**.

Honorary degree for Barry Arnold

The Colegio de Postgraduados, a prestigious academic institution located at Chapingo, Mexico, has decided to present its 2023 Honoris Causa Award to Dr. **Barry Charles Arnold**, "for his outstanding joint work and contributions over the last 50 years with our Statistics Department." Dr. Arnold has actively participated teaching and working in research projects within the Master of Science and PhD programs at the institution. His "unending enthusiasm, wisdom, openness and willingness to collaborate with academics and students" has contributed to a notable advancement of Statistical Science in Mexico.

Two corrections

In the previous issue's article about the two IMS Fellows who were awarded MacArthur Fellowships, we stated incorrectly that **Lester Mackey**'s team had won the 2009 Netflix Prize. In fact, Mackey was part of the team that came second. He explained, "We tied the winning team, but the tie breaker was time of submission, and we submitted 20 minutes later!"

One of the authors of the obituary of Ehsanes Saleh that appeared in the previous issue is Dr. **Mina Norouzirad**, whose affiliation was wrongly given as University of Lisbon, Portugal. Dr Norouzirad works at the Center for Mathematics and Applications, Universidade Nova de Lisboa, Portugal.

We apologize for any confusion arising from these errors.

= 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
https://projecteuclid.org/aoas

Annals of Probability: Christophe Garban, Alice Guionnet
https://imstat.org/aop
https://projecteuclid.org/aop

Annals of Applied Probability: Kavita Ramanan, Qiman Shao: https://imstat.org/aap
https://projecteuclid.org/aoap

Statistical Science: Moulinath Bannerjee
https://imstat.org/sts
https://projecteuclid.org/ss

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: Cristina Toninelli UPDATED
https://projecteuclid.org/euclid.ejp

Electronic Communications in Probability: Patrícia Gonçalves UPDATED
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

Probability Surveys: Adam Jakubowski UPDATED
https://imstat.org/ps
https://projecteuclid.org/ps

Statistics Surveys: Yingying Fan
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 Giacomin, Yueyun Hu
https://imstat.org/aihp
https://projecteuclid.org/aihp

Bayesian Analysis: Mark Steel
https://projecteuclid.org/euclid.ba

Bernoulli: Davy Paindaveine
https://www.bernoullisociety.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

Radu's Ride: Is More Less?

Our contributing columnist Radu Craiu, University of Toronto, writes:

In this age of excess, the question in the title will sound sacrilegious. Has the permissive attitude towards a bloated pantry, shoe rack or refrigerator spilled over into (data) science? While the evidence is piling up, the irony of our lived reality is that whatever one columnist says will be drowned in the noise, so here goes nothing.

The first item of evidence concerns ChatGPT, which seems to haunt everybody's Wells-ian nightmares—who needs a War of the (outer) Worlds when we are building our own from scratch? There is also the other side of the fear-mongering equation, that we need ChatGPT to improve on our lives (which I take as meaning that we could produce more derivative stuff of questionable quality, but I am not here to nitpick). I hate to disappoint this latter camp, but ChatGPT has left me feeling as helpless as I was before meeting it. For a number of reasons that, when all is said and done, boil down to my very human nature, I was late preparing a slide deck for a class I was scheduled to give on computational statistics. The material was ready, but it was scribbled down in a way that goes back to the code of Hammurabi: by hand. So, I figured I could get ChatGPT to give me a head start on those demanding LaTeX slides that take so much time to write when you type with two fingers. I will spare you the details of which topics I needed help with, since I suspect that ChatGPT is equally useless for many others, but I can confirm that what I got back was a bunch of general, mostly useless drivel that one might expect from someone who knows someone who has a friend who played roulette in Monte Carlo. I am happy for all those who found ChatGPT a menace to society as we know it, since it means that their life got better for a brief moment, enough to wonder whether that relief they're feeling is the siren song of doom. Alas, these people seem to be all elsewhere.

Panicking that I would be left behind in my level of panic, I started to pay more attention to what was said around me, and the most worrisome message I could get is that ChatGPT is awesome at writing grant introductions or could take a lifeless letter and pour some Drake slang into it. I am not sure this is enough to wake up the neighbors.

My second item of evidence should have been the first, because it is not only epistemological but also historical. At the core of classical statistics lies the dictum that "less is more." One might step back and ponder whether in our discipline's DNA it is also, non-equivalently, inscribed that "more is less." This might explain our reluctance to juggle the data science juggernaut in which *more is more:* more data, more parameters, more attention. We talk to our students about the merits of large data, bringing more and more information about our reasonable models, but we eye suspiciously those who play in bigger backyards with increasingly complex models that are harder and harder to interpret—yet, just like toys that sparkle, they seem to mesmerize and fascinate beyond any reasonable doubts. Facing parameter spaces that grow with the data size, our asymptotics are often caught in some sort of statistical purgatory in which they neither kick in nor are completely abandoned, thus leaving them at the mercy of higher powers, also known as machine learners. Our one-sided, valiant attempts to create structures and foundations within the noise seem to be drowned in a cavalcade of advances dressed in loud enthusiasm and shiny success.

The story is not as simple as a column's writer would like, though. Clearly, we have become very good at observing the universe, whether it is at the macro-cosmic level of outer galaxies or the microscopic level of disposable income. An Astrostatistics conference left me dizzy with the number of terabytes of data that have been collected already, and the even larger number that will be available in the near future. The odd pairing between our thirst for data and our limited abilities to handle it notwithstanding, one must justify all this effort with an analysis, and one that yields results, no less. While galaxies eons of light years away are sampled thoroughly, my colleague who is an expert in Demography (to be read as mortality) is grieving the lack of reliable data on migration, child mortality and human trafficking in much closer parts of the universe. My statistical brain is challenged by both sides, but I feel like I have a bit of a slow start in at least one of them.

By the time you read this in that famous January mood, you will likely be already riddled with guilt about all those New Year resolutions you have broken or are about to break… but leave all regrets behind and know that we are all, more or less, in the same boat!

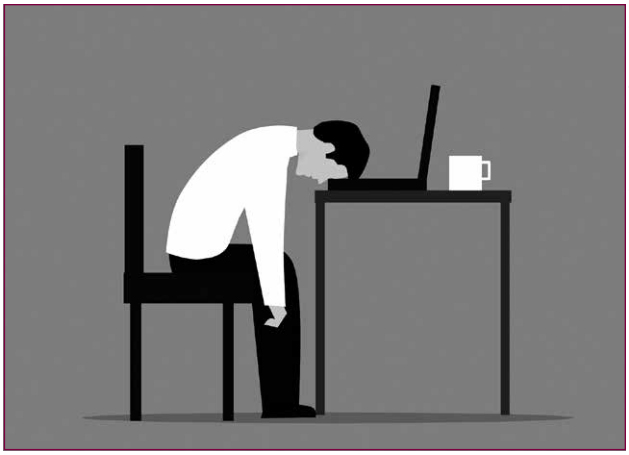


Image by Mohamed Hassan from Pixabay

IMS President's Corner:
Dreams, and Shattered Dreams

IMS President Michael Kosorok writes:

I recall as a young assistant professor, reading a book in the university library on empirical processes, and trying to learn the concepts, when a senior professor walked up to me and said (approximately): "You should stop wasting your time on this, just accept the fact you will never learn this material, and move on." I quickly woke up from this dream (thankfully, it was only a dream), and sat up in my bed, feeling very angry. It was at that point that I made an intensely felt commitment to work harder on learning this area, including working through any needed preliminary material. For full disclosure, I also want to point out that the professor in my dream, who was actually on the faculty at the time, would never have said something so devastating and would have been (and was) very supportive of junior faculty, including me. The other caveat I want to make is that anger is probably not the best primary motivator, but it can be useful sometimes.

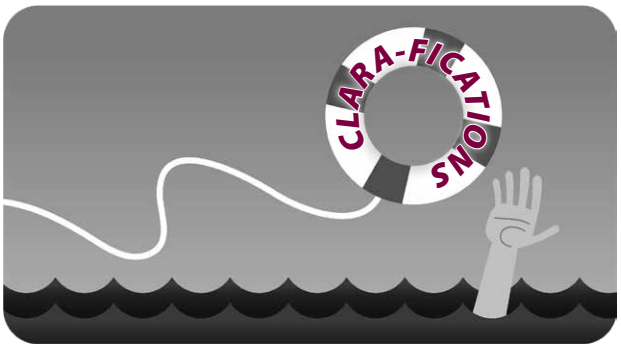
Before I moralize more on this dream story, I want to tell another story, which was not a dream. I was still a young assistant professor, and I had just received a polite rejection letter from the *Annals of Statistics*. The letter writer was Larry Brown, who was one of the co-editors at the time. Even though I was very, very disappointed, I couldn't help but notice how thoughtfully and carefully worded the letter was, how clearly the issues were laid out, and how the underlying tone was one of kindness. This experience and realization motivated me to move forward, work on the things I needed to, and get back at it.

These stories illustrate both bad and good mentoring (although the bad example wasn't even real), but they also illustrate the role of failure and fear of failure in our academic and professional development. Failure in this context can take on many forms, including finding a fundamental flaw in a proof, having trouble getting simulations and data analyses to yield meaningful results, paper rejections, grants not getting funded, difficulties with promotion, and so on. For most of these kinds of failures, there are valuable things we can learn from them which can help us make real progress in the big picture of our research program, and in our overall research excellence, potentially changing directions as needed. Most superstar researchers I know have worked on very difficult problems that required managing short-term failures on a regular basis. Failure in these settings, as well as in many other settings, can be viewed as indications of real progress. Failure can also be a sign that we are not avoiding the hard parts of the research process. However, an important warning to give here, is that experiencing failures without learning from them can be very counterproductive and even harmful.

As mentors, we can help others learn how to manage and progress from—and be less afraid of—failures. I have been privileged to benefit from many mentors, many of whom helped me gain perspective about failure experiences. I won't name them here, but I want to express appreciation to all of them and all mentors everywhere. Personally, my own mentoring efforts are some of the most meaningful experiences of my career. The role of mentoring is extremely valuable to our profession, not just to help us manage failures, and the accompanying emotional ups and downs, but to help us successfully pursue excellence of the highest caliber.

Any Questions? Call for ***Clara-fication***

Do you need some friendly advice? Are you unsure how to go about something? Does everyone around you look like they know exactly what they're doing? (*Hint: they don't!*). We're inviting early-career researchers to send their **questions about the life of a researcher or ask for career advice**, and *Clara-fications* columnist Clara Grazian will try to find an answer. We'll publish the question and answer in the next available issue. **Don't worry, we won't publish your name.** Your question might even be what someone else has been secretly wondering… Send your questions for Clara to **bulletin@imstat.org**.



2024 World Congress update

The Bernoulli–IMS 11th World Congress in Probability and Statistics takes place at Ruhr University Bochum, Germany, August 12–16, 2024. Local Organizing Committee chair Herold Dehling writes:

Planning of the upcoming Bernoulli–IMS 11th World Congress on Probability and Statistics is now happening in big steps. All the plenary speakers have been nominated, and the themes, organizers, and speakers for most of the almost 50 Invited Paper Sessions have been selected. These Invited Paper Sessions cover a broad range of topics at the forefront of current research in Probability and Statistics; more details can be found on the webpage of the World Congress, www.bernoulli-ims-worldcongress2024.org/

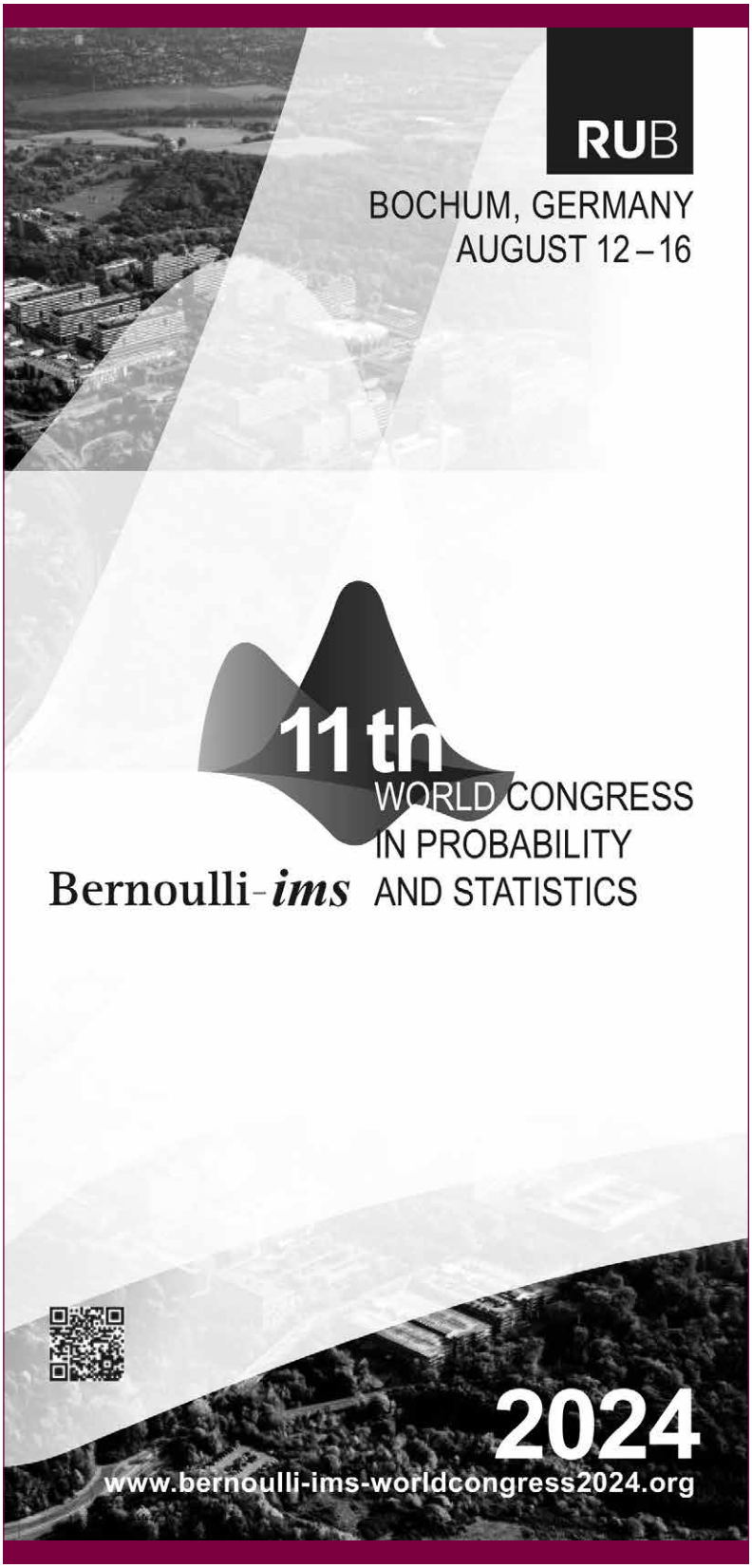
On the Thursday evening of the World Congress (15 August), the Ruhr University Department of Mathematics will host the **Ising Lecture**, delivered by **Frank den Hollander** (Leiden University, The Netherlands). The Ising Lecture is organized in memory of Ernst Ising (1900–98), who spent most of his childhood and youth in Bochum, before he moved as a student first to Göttingen and later to Hamburg. It was in his 1924 Hamburg PhD thesis that Ising studied a model for ferromagnetism introduced in 1920 by his advisor Wilhelm Lenz, and that now bears Ising's name.

Many researchers have taken the opportunity to contribute to the scientific planning of the conference by proposing Organized Contributed Paper Sessions (OCPS), with four talks devoted to a theme of current research interest. At this point, 37 OCPS on a broad range of topics in the area of Probability and Statistics have been accepted. In reaction to the great success of this initiative, the deadline for the submission of proposals is extended to January: see www.bernoulli-ims-worldcongress2024.org/call-for-papers

The submission of titles and abstracts for contributed papers and posters is also open (February 15 deadline).

Please visit the conference website regularly for updates on the scientific programme as well as details of social activities during the World Congress.

Parents who intend to bring their children to the conference will soon find information about child care that will be provided on the campus of Ruhr University Bochum. Don't forget you can apply to the IMS Child Care Initiative for help with these costs (deadline June 1): see information at https://imstat.org/meetings/ims-child-care-initiative/



New IMS prize for young women data scientists

IMS Council has recently voted to create a new annual prize, the **IMS Thelma and Marvin Zelen Emerging Women Leaders in Data Science Award**. Find out how you can get involved.

In today's data landscape, there is a notable surge in extensive and varied datasets, encompassing big data and unstructured data types. This surge underscores the need for advanced tools and methodologies that can facilitate effective analysis and comprehension. Data science, with its emphasis on predictive modeling, machine learning, data exploration, and automation, offers the essential framework for extracting valuable insights, facilitating informed decision-making, and addressing intricate real-world challenges. By integrating data science into the modern realm of statistical science, statistics can gracefully adapt to the evolving data landscape, leverage cutting-edge technologies, and maintain relevance within the data-driven decision-making landscape across diverse sectors and industries.

Recognizing the contributions of women researchers in data science is imperative as it advances diversity, equality, and inclusion, fuels innovation, inspires future generations, and enables us to tap into a wide range of talent and perspectives for tackling intricate, data-driven problems, ultimately yielding benefits for the field and society at large. There haven't been many awards that acknowledge the achievements of emerging women leaders in data science. It is highly beneficial for the IMS community to institute such an award, setting examples and motivating valuable contributions. The "IMS Thelma and Marvin Zelen Emerging Women Leaders in Data Science Leaders Award" is designed to acknowledge the achievements of young women data scientists who have made substantial contributions to the data science field and demonstrated leadership qualities.

The award will be given annually to three women data scientists, who have not yet reached their 41st birthdays during the year of the award. The IMS gives the award committee latitude to consider nominees with extenuating circumstances that may have delayed professional achievements. The award, consisting of a plaque, a citation, and a cash honorarium, will be presented at the IMS Presidential Awards Ceremony held at the IMS Annual Meeting.

The committee aims to raise $150,000 to establish the award. The **IMS Thelma and Marvin Zelen Emerging Women Leaders in Data Science Fund** is an endowment fund that provides a financial prize given annually to acknowledge the achievements of young women data scientists who have made substantial contributions to the data science field and demonstrated leadership qualities. **You can donate to the fund at https://imstat.org/shop/donation/**

Frontier Science Foundation-Hellas

Thelma and Marvin Zelen

Professor Marvin Zelen (1927–2014), a prominent figure in biostatistics, was recognized not only as a leading light but also celebrated for his forward-thinking vision, generosity, and nurturing mentorship, guiding two generations of researchers. He chaired the Department of Biostatistics at Harvard T.H. Chan School of Public Health from 1981–1990, leaving a lasting impact. Additionally, during the 1970s at the Sidney Farber Cancer Center (now Dana–Farber Cancer Institute), he played a pivotal role in founding, and leading until 1999, the Department of Biostatistics and Computational Biology (now the Department of Data Science), significantly contributing to the Institute's global growth and influence.

Prof. Zelen gained renown for pioneering data science contributions, particularly in statistical methodologies and study designs crucial for clinical cancer trials, which evaluate drug safety and efficacy. He introduced measures to enhance data quality and reduce biases, now industry standards, advancing clinical trial research and cancer treatment. His data science research spanned key areas, including early cancer detection, cancer progression modeling, and optimizing screening strategies, especially for breast cancer. Dr. Zelen's lasting impact as an advocate for integrating quantitative methodologies into global clinical cancer research is evident through his transformative contributions, encompassing experimental designs, data analysis, quality assurance, academic leadership, nonprofit models, mentorship, and philanthropy, benefiting researchers worldwide.

Thelma Zelen, often regarded as the driving force behind Marvin Zelen's groundbreaking work in data science and biostatistics, played a pivotal but less visible role in supporting and enabling her husband's achievements. Including Thelma Zelen's name in the award not only honors her significant contributions but also symbolizes the inclusive and collaborative ethos that should be at the core of data science and scientific endeavors at large.

Look out for a call for nominations in a forthcoming issue. In the meantime, you can start to think about who you will be nominating! Thank you, too, for any contributions to the fund for this award.

Written by Witten:
Call Me Callie

Daniela Witten writes: Devoted readers of this column will know that I am a parent to three young humans. And while I love them beyond measure, the fact remains: keeping three humans alive (or four, depending on your take on husbands) is basically my limit. I am up to my ears in mammals. Now, please don't @ me with comments about how a pet bunny is critical for a child's emotional development, or how guinea pigs are underrated. I meant what I said: I'm tapped out, mammal-wise.

My kids are perpetually disappointed that I won't get them a dog, but they find solace in their very close relationship with Callie*, our friends' miniature goldendoodle.


This is not "Callie" the goldendoodle

Callie is a princess among poodle mixes, a queen among canines, and a wonder among wolf descendants. When she enters the dog park, the other pooches stop and stare. She is the belle of her bougie neighborhood. She makes the other designer dogs look like run-of-the-mill rescues. Simply put, Callie is a sight to behold, and she knows it.

Now, enter Ralph and Bess, our dear friends and Callie's owners—er, I mean, dog parents. Though Ralph and Bess are equally besotted with Callie, they interact with her in different ways.

When Ralph feels cold, he puts Callie across his lap like a blanket or under his feet like slippers. When he feels bored, he teaches her to walk on her hind legs or to roll over for treats. When he feels tired, he takes a nap with Callie as his pillow.

Bess interacts with Callie differently. When Callie feels cold, Bess snuggles Callie on her lap. When Callie feels bored, Bess has her do tricks for treats. And when Callie feels tired, Bess finds a place for Callie to take a cuddly nap.

Basically, Ralph interacts with Callie to make Ralph feel good, whereas Bess interacts with Callie to make Callie feel good. Who does Callie prefer? Not surprisingly, the answer is Bess.

This is actually not a column about dog ownership (a topic that I, as a non-dog owner, am in no way qualified to discuss). Instead, it's a column about how to give a research talk. In this metaphor, the audience is Callie, and you get to decide whether to be Ralph or Bess. Will you be a Ralph, and make yourself feel good, or a Bess, and make your audience feel good?

To answer this question, it's worth considering the reason you're giving a talk. Is it:

1) To make yourself feel smart?
2) To make the audience think you're smart?
3) To teach the audience about your research?

I'm only going to say this once: never let the answer be 1). If you want to feel smart, then please find another way to scratch that itch, like completing the Sunday crossword or studying Ancient Greek or engaging unsuspecting and disinterested strangers in arguments about politics while on public transit. But, I beg of you, never a research talk.

What about reason 2)? Also no. Your audience does not care to watch your performative show of intelligence.

So, via process of elimination, the reason to give a talk should be 3): to teach your audience about your research. We will now consider how Ralph and Bess might approach this goal, and which strategy will be most effective.

Ralph copy-pastes from a paper.

In most cases, our talk is based on a paper, and the fastest way to prepare slides is to copy-paste chunks of text (perhaps transformed into bullet points) and technical results.

However, while long stretches of text and detailed technical results are a good way to share information in a paper, they are problematic in a talk. It is hard for the audience to keep track of more than a minimal set of notation in a talk (an audience member can't flip back to a previous slide if they forget notation) — and talks with a lot of text and details are boring! Yes, it's easy to create a talk by copy-pasting… but it rarely leads to a great result.

Bess creates a visual to explain her main ideas.

When I teach courses on presentation skills for grad students, I assign an exercise that is simple in concept but challenging in

execution. I ask students to take a statistical idea, and create a 10-minute presentation to explain it with visuals and without any words or equations.

For instance, consider a two-sample *t*-test. I'm not asking for students to, say, present simulation results showing the power of a two-sample *t*-test: rather, I'm asking them to explain the concept and logic underlying a two-sample *t*-test, without any words or math. This requires really thinking about what the key point of a two-sample *t*-test is, and communicating that—and only that!—through a series of visuals. For instance, I might make a series of visuals to represent (i) a sample from a $N(0,1)$, (ii) a sample from a $N(c,1)$, (iii) the two sample means, (iv) the difference between the sample means. Then I might create an animation iterating through (i)–(iv) a whole bunch of times, to illustrate (v) convergence to the normal distribution. Remember, no words and no equations: only visuals.

I really do recommend that you try out this exercise for your own research project. Yes, your research is undoubtedly more complicated than a *t*-test, and I fully understand that this won't be easy. But if you think hard enough, then you can surely distill the key point—the creative spark, the interesting idea, the thing you really want your audience to take home from your talk—down to a series of figures, which you can then use both to introduce this point in your talk, and as a "running" visual aid throughout your talk.

Ralph tries to explain it all to the audience.

You cannot squeeze an entire 30-page paper into a 45-minute talk. I promise that if you try, then your talk will be neither understandable nor interesting. Instead, think about the most interesting couple of points of your paper, and explain them as clearly as possible.

I personally think that there's no place in a talk for detailed proofs, or for more than one carefully chosen simulation result. Instead, focus on the big-picture main idea: the scientific or statistical problem that you're solving, and the creative insight that went into solving it.

Bess thinks about what the audience knows.

There's a big difference between the set of people who read my papers and those who attend my talks. For instance, if I'm giving a department seminar, then members of the department who are working in completely unrelated areas may attend out of general interest. By contrast, typically only people in my research area will read my papers.** So I need to target a department seminar towards a much broader audience than my papers.

To achieve this, I focus my talks on the big-picture main idea: I spend a substantial portion of the talk explaining what problem I'm trying to solve, why it's important, what solutions were available before my work, and so on. Establishing this framing will substantially decrease the time available to present my own research contributions (and means that I certainly will not have time to present every single detail!). Furthermore, it's hard to do, since this requires zooming farther out on the problem than I do in my papers. But it's worth it, since giving a talk that almost nobody understands is a waste of everybody's time: the audience's, and my own.

Before I close, I'd like to revisit reason 2). I've said that the goal of a talk is not to show the audience how smart you are. But there is perhaps one exception: if you're very junior and are giving a job talk. Then the primary goal of your talk should still be 3), but you could reserve the last five minutes for technical material to "wow" your audience with your raw intellect, in case there are curmudgeons in the department who judge a talk by how technical the content is. Five minutes is plenty of time for this, and it should come at the end of the talk: if you put it earlier then you'll lose the interest of the rest of your audience.

There is no one way to give a good talk, but there are many paths towards a bad talk. At the end of the day the question is: did you consider your audience's needs, or your own? Be a Bess and not a Ralph. Callie (and your audience) will appreciate it.

Daniela Witten lives in Seattle with four human mammals, and—coming soon—a hermit crab. Her children can't wait.

* All names changed to deter would-be dognappers.

** To make this more precise: of course, I hope that some people outside of my immediate research area read my papers! But if they find that they are missing background knowledge required to understand my papers, then they can pause and fill in the gap before continuing with my paper. This is not possible during a talk.

YoungStatS interview: **Susan Athey**

Dr. **Nina Deliu**, YoungStatS editorial board member, talked with Professor **Susan Athey**, Stanford University.

Susan Athey is The Economics of Technology Professor at Stanford Graduate School of Business. She is an elected member of the US National Academy of Sciences and serves as the 2023 President of the American Economic Association. She is the recipient of the John Bates Clark Medal, awarded by the American Economic Association to the economist under 40 who has made the greatest contributions to economic thought and knowledge.

Her research spans the areas of causal inference, econometrics, statistics, and machine learning.

Economist Susan Athey in San Francisco in 2020; photo by Christopher Michel

Nina: ***The breadth and depth of your education and work is astonishing. Which are the pros and cons of having such a hybrid background, and which is the discipline you mostly feel you belong to?***

Susan: I do feel that my training as an economist is most central to what I do. It is the discipline that grounds the questions I ask and how I think about what is important. I find that working across disciplines forces me to understand things more deeply. And sometimes that leads you to question assumptions or find a different way of looking at things. An exciting part of changing areas is that it always feels new, and I'm always learning; but I do think it is important to spend long enough in an area to understand it deeply. Finding fantastic coauthors who are experts in a new area is also really helpful for moving into that area, especially when each author brings important problems and expertise to the table. I've been very fortunate to work with people like Stefan Wager from statistics and David Blei from computer science and statistics, and I have learned a lot from students.

Nina: ***In your career, you have collaborated with many private and public technology firms. What do you think academics can do to get engaged with companies in a way that is mutually beneficial?***

Susan: Working with companies has been extremely important for me in terms of getting exposed to technology and to new problems, and for teaching me how to build things and generally how to get more complicated projects done. Companies give you the opportunity for large-scale impact, and my recent collaborations focused on social impact applications. However, it can be challenging to balance conflicts of interest and confidentiality; I chose projects where the companies were aligned in my interest in publication. My lab at Stanford has built collaborations through which we built impactful products, introduced social impact companies to new methods, and produced high quality academic research, all while providing valuable training to students.

Nina: ***Jointly with your husband Guido W. Imbens you have been a forerunner in the inclusion of artificial intelligence (AI) in the economic field. Would the future mean higher and more frequent inclusion of machine learning in statistical and econometric models?***

Susan: The intersection of statistics, econometrics and machine learning has come a long way since I started working on it in the late 2000s. Despite initial skepticism, now, it is fairly well understood that machine learning methods can be extremely effective in combination with established tools for causal inference and economic modeling of human and firm behavior. In terms of what is next, I am excited for the economics profession to find new uses for

"foundation models" from AI, that is, models that provide a low-dimensional representation of high-dimensional data. There is also a great potential for new interventions that can be designed using AI, whose benefits could be measured in randomized experiments.

Nina: ***What do you think about the future of statistics and its interplay in data science, machine learning and artificial intelligence?***
Susan: Recently the fields of machine learning and AI have been moving so fast that there is a lot of pressure for young people to focus only on the latest developments. However, I think something is lost if students don't get a solid foundation in statistics, and don't build intuition on how and why models work. My guess is that the pendulum will swing back towards statistical understanding as we attempt to analyze the performance and understand the weaknesses of new AI algorithms.

Nina: ***What do you think is an under-appreciated area within statistics and data science? On the other hand, what is overemphasized?***
Susan: It used to be that causal inference was under-appreciated, but it seems that recently it is much better appreciated! I think that in the future, so much of our life and economy will involve digital interactions, that there will be an even larger role for designing experiments that can be used both to gain generalizable knowledge and to guide the path for incremental innovation and personalization. I think there is a lot more to do in designing complex experiments, which may consider interactive environments or bandits for adaptive experiments, among others.

Nina: ***What qualities do you most value in students and young researchers? What advice would you share with them?***
Susan: There are a lot of ways to make a contribution: more theoretically oriented students can share insights, while students with implementation skills find creative ways to get things done. My own lab is interdisciplinary, and I love that people have different career goals and objectives. I especially value people who can think conceptually and reason about how and why things work. I like working with people who are can-do types, who are problem solvers. In terms of advice, learning to write precisely and unambiguously is always helpful. A lot of my students are in between fields and are trying to decide which path to follow. For them, I suggest to find a community that shares your values, so that your peers will appreciate what you are contributing.

Send us *your* Invitation to Research

In the September 2022 issue, in an "Invitation to Research" section, **Alexander Y. Mitrophanov**, Senior Statistician at the Frederick National Laboratory for Cancer Research, [US] National Institutes of Health, invited members to collaborate on Quantitative Perturbation Theory for Stochastic Processes at https://imstat.org/2022/08/31/an-invitation-to-research/. He followed that up in the October/November 2023 issue with an invitation to collaborate on Statistics, Stochastics, and Data Science for Systems Biology (https://imstat.org/2023/09/29/an-invitation-to-research-systems-biology/). Alex says he's had some "very meaningful" follow-up, which has triggered some further interactions.

We invite your invitation! IMS members are encouraged to write in to propose new research ideas or directions. These do not need to be formally/provably absolutely new; it's an opportunity to emphasize the benefit of an idea for the research community. The purpose is twofold: **to gauge the research community's interest** before investing more time and effort into these ideas; and **to find collaborators** to tackle these new ideas, if other people become interested and come up with related ideas.

We encourage interested readers to respond to these ideas with (constructively) critical comments and/or suggestions, and to write in and share your own ideas: bulletin@imstat.org.

Getting on the Program at JSM 2024

Abstract submission is now open for the 2024 Joint Statistical Meetings (JSM). Its Program Chair, Debashis Ghosh, explains the progress made on the program so far, and outlines the remaining opportunities to present your research at one the largest statistical events in the world:

JSM 2024 will be held in Portland, Oregon, from August 3–8. The theme is "Statistics and Data Science: Informing Policy and Countering Misinformation," which emphasizes the policymaking and information dissemination goals central to statistics and data science.

The program committee has put together 166 invited sessions, including paper and panel sessions. Here is a sampling:

- Statistical Literacy in the Era of ChatGPT
- Reducing Barriers to Teaching Novice Learners How to Code
- Recent Advances in Trustworthy Reinforcement Learning
- Statistical Solutions in Pursuit of Sustainable Development
- Toward a Common Framework for Use of Real-World Evidence in Drug Development
- Data-Driven Enhancement of Diversity in Clinical Trials: Making Clinical Trials Equitable to ALL
- Preserving Scientific Freedom and Human Rights: Defending Ethical Conduct in Statistics
- Trustworthy Data Sciences

In addition to these sessions, participants will find presentations about modern statistical learning methods/artificial intelligence, precision medicine, -omics research, causal inference, network analysis, survey statistics, Bayesian methodology, and other advanced statistical methods and theoretical advances in statistics.

Many strong proposals were not selected due to the competitive selection process. We had more than 300 submissions for invited proposals, which brings me to the following points:

- Even though we have 166 invited sessions, many of these are preassigned (e.g., the IMS award lectures, ASA journal editors' invited sessions, the Elizabeth Scott Award Lecture). I estimate the acceptance rate to be 25 percent.
- The program is organized by the 2024 JSM program committee, which represents the ASA sections, committees, and partner societies. Each representative has a certain allocation of slots and reviews session proposals that list their section, committee, or partner society as the primary sponsor. Members of the program committee did a good job exchanging proposals when it made sense, as many invited sessions fell under the purview of more than one section or society. There is also variation in how different sections choose their invited sessions.
- Every section could nominate two sessions for the invited program. From that pool, we selected 25 sessions.
- The program committee prioritized sessions that aligned with the theme, "Statistics and Data Science: Informing Policy and Countering Misinformation." Proposals that made a strong case for how they aligned with the theme tended to get higher weighting in the review process.
- While JSM does have a "one speaker, one session" rule, a challenge the committee had to deal with was seeing people listed on several invited session proposals. We tried to be equitable and fair with this to the extent we could.

We are now reviewing topic-contributed session proposals. In the event your proposal is not selected for an invited or topic-contributed session, there are still ways to get involved in the 2024 JSM program.

Speed Sessions

Speed sessions allow for an electronic poster (e-poster) presentation, which enables video and other special effects. A speed session consists of 20 oral presentations of approximately four minutes, with a five-minute break after the first set of 10 talks. These short oral presentations are followed by an e-poster session. The regular 110-minute contributed poster session is divided into two sessions for the speed poster sessions. There is 45 minutes for the first group of 20 presenters, a 20-minute transition period, and then 45 minutes for the second group of 20 presenters. The program committee tries to cluster speed session posters by topic to attract a large and focused audience.

The following incentives are offered to presenters who participate in speed sessions:

- Electronic poster boards, so there is no additional cost or hassle associated with printing or transporting a poster
- Ability to present orally and through an electronic poster

Following are some tips, based on experience with previous speed sessions:

- The oral component should lure people. Don't try to be too detailed, but rather give the big picture view. A little humor helps.
- E-posters can include software demonstrations, analysis animations, videos, and interactive statistical graphics or dashboards. Take advantage of the versatility of the medium. Don't think in terms of a static poster. Be modern and daring.
- When you submit your contributed abstract, simply select "Speed" as the sub-type.

Poster Sessions

Poster sessions permit extended face-to-face discussion with individuals or small groups. Advantages are direct feedback and the ability to display extensive graphical or tabular materials, possibly in addition to a handout.

Contributed Paper Sessions

Nearly half of JSM sessions are contributed, which consist of seven papers with 15 minutes of presentation time for each, including the introduction of the speaker and questions. Contributed abstract submission closes February 1, 2024, and a decision about acceptance will be made by April 1, 2024.

Abstract Submission

To contribute to the JSM 2024 program, submit an abstract and title by February 1, 2024, at ww2.amstat.org/meetings/jsm/2024/submissions.cfm#abstracts. As part of the submission process, speakers must also specify the choice of the ASA section or JSM partner society most closely associated with the topic of their presentation. The system will be reopened for abstract editing from April 1–May 31. For details, visit ww2.amstat.org/meetings/jsm/2024/submissions.cfm#abstracts.

Contact JSM 2024 Program Chair Debashis Ghosh at debashis.ghosh@cuanschutz.edu with any questions.

Call for Volunteers: Session Chairs

The success of JSM requires participation from the statistics community, and each JSM session requires a chair. Chair responsibilities include contacting speakers with session information before JSM, introducing speakers, and managing presentation time during the session. Chairing a session is a great way for researchers who are new to the profession to build a professional network and get involved with JSM. Contact the IMS Invited Program Chair, Ji Zhu (jizhu@umich.edu) or the IMS Contributed Program Chair, Emily C. Hector (ehector@ncsu.edu).

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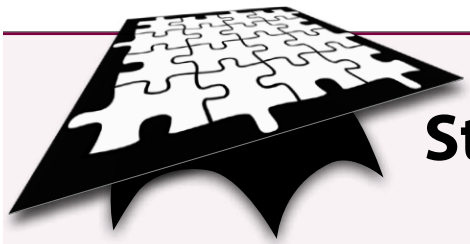

Student Puzzle Corner 48

Anirban DasGupta sets two puzzles, one on probability and one on statistics, about Erdős–Rényi graphs, among the most basic models of random graphs. Random graphs are used to model network data. Take a vertex set equal to {1, 2, …, n} where $n \geq 2$. Given two distinct vertices u, v we write $u \sim v$ if there is an edge between u and v. In the Erdős–Rényi model, the $\binom{n}{2}$ variables $I_{u \sim v}$ are taken to be i.i.d. Bernoulli random variables with a common parameter p, and we write a realization as $G(n, p)$.

Puzzle 48.1a Show that $P(G(3, p)$ is connected$) = 3p^2 - 2p^3$.

48.1b We call a vertex isolated if its degree is zero. Find a formula for the mean and the variance of the number of isolated vertices in $G(n, p)$.

48.1c Give an elementary proof that the number of isolated vertices in $G(n, p_n)$ converges in probability to zero if $p_n = c\frac{\log n}{n}$ with $c > 1$. Can you make a conjecture about the limiting behavior of the number of isolated vertices in $G(n, p_n)$ if $p_n = c\frac{\log n}{n}$ with $c = 1$?

48.1d Suppose $p = p_n = c\frac{\log n}{n}$ where $0 < c < 1$. What can we conclude about $\lim_{n\to\infty} P(G(n, p_n)$ is connected)?

Puzzle 48.2a Suppose you have obtained $N = 100$ independent realizations of a $G(n, p)$, where you know n, but you are not willing to assume a known value for p. Suggest a reasonable method to estimate p based on your 100 realizations of $G(n, p)$. You can suggest more than one method if you wish.

48.2b Suggest a formulation for the following question: Find a best fitting $G(n, p)$ to a realized graph G_0 on n vertices.

Deadline: February 1, 2024

Student members of IMS are invited to submit solutions to either or both of these puzzles to bulletin@imstat.org (with the subject "Student Puzzle Corner"). If you get it right, 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.

A Reminder of Puzzle 47

Puzzle 47.1a A six-sided fair die is repeatedly rolled until each of the six faces appears twice. Let W be the number of rolls needed to stop the experiment. Find $E(W)$ explicitly.

Puzzle 47.1b Next, suppose that the die is repeatedly rolled until one of the six faces appears three times. Let Z be the number of rolls needed to stop the experiment. Find $E(Z)$ explicitly.

Puzzle 47.2. Provide a test of the hypothesis that a six-sided die is fair by using W, or Z, or both, and indicate exactly when you will reject the hypothesis of fairness.

Bilol Banerjee

Bishakh Bhattacharya

Solution to Puzzle 47

Congratulations once more to Bishakh Bhattacharya and Bilol Banerjee (both from ISI Kolkata, pictured left), for their answers to 47.1 and 47.2, respectively. Anirban DasGupta explains:

Puzzle 47.1a (see left) We use the technique of superposition of independent homogeneous Poisson processes. Suppose an m-sided fair die is repeatedly rolled, and that the rolls are mutually independent. We consider m independent homogeneous Poisson processes, each with an intensity equal to $1/m$. If a particular throw of the die results in face number i, the ith process has a jump at that time. The number of events in any given process up to time x is a Poisson with mean x/m, and these are independent. Thus,

$$E(W) = \int_0^\infty P(W > x)\,dx = \int_0^\infty [1 - (1 - e^{-x/m}(1 + x/m))^m]\,dx$$

For $m = 6$, this equals $\frac{390{,}968{,}681}{16{,}200{,}000} = 24.134$.

Continues on page 15

We can calculate $E(W)$ for dice of other shapes. For a tetrahedral fair die, $E(W) = 14.189$; for an octahedral die, $E(W) = 34.885$, and for a dodecahedral die having 12 faces, $E(W) = 58.045$.

Puzzle 47.1b If instead we want the expected waiting time Z until one of the m faces occurs three times, then by using the same technique,

$$E(Z) = \int_0^\infty P(Z > x)dx = \int_0^\infty [e^{-x/m}(1 + x/m + x^2/(2m^2))]^m \, dx$$

For m = 6, this equals $\frac{4{,}084{,}571}{559{,}872} = 7.2955$.

Problem 47.2 One can use W or Z to write a test for fairness of the die. For instance, one can calculate the second moment of W by evaluating $2\int_0^\infty x\,[1 - (1 - e^{-x/m}(1 + x/m))^m]\,dx$. Hence, one calculates both the mean and the variance of W. If the realized value of W is w, we can compute a bound on either the two-sided or a one-sided P-value from the mean and the variance of W. Or, one may directly calculate the P-value. Similarly, tests can be constructed by using Z.

Obituary: Theo Gasser

1941–2023

Theo Gasser

Theo Gasser died on October 1, 2023 in Zürich, Switzerland, where he was Professor Emeritus of the Institute of Biostatistics at the University of Zürich, at the age of 82.

Theo Gasser was born on May 9, 1941, in Rüti, Switzerland. Gasser established Biostatistics at the University of Zürich starting in 1991, retiring in 2006, after serving as Professor at the University of Heidelberg, Germany, 1976-1991, where he was affiliated with both the Zentralinstitut für Seelische Gesundheit of the Medical Faculty Mannheim, and the Institute of Applied Mathematics in the Department of Mathematics.

He made major contributions to the area now known as Functional Data Analysis (FDA) and also was a main contributor to the methodology and theory of kernel methods for smoothing and differentiation ("Gasser–Müller kernel estimator"). His PhD advisor at the ETH Zürich in Switzerland was Peter Huber, the pioneer of modern robust statistics, who had begun to embrace data analysis when he became the advisor of Gasser and other students at the ETH. Gasser also made numerous contributions to statistical EEG analysis and auxology [the study of all aspects of human physical growth], the latter through a close association with the Zürich Longitudinal Growth Study. Throughout his career he was committed to exploratory data analysis with computational emphasis.

Theory for FDA was crafted in 1950 by Grenander, emphasizing Karhunen's 1949 basis expansion in the context of Gaussian processes, which is now known as Karhunen–Loève expansion. In this paper, Grenander presented the now ubiquitous functional linear model as a consequence of the Gaussianity of stochastic processes. Another key contribution to the nascent field of FDA was the development of functional principal component analysis in Hilbert spaces by Kleffe in 1973, and a French school of FDA emerged in the early 1980s in Toulouse.

Gasser's contributions to the early development of FDA were independent from this previous work and led to several highly cited papers. They brought entirely new dimensions to this field and were motivated by his commitment to analyze longitudinal growth curves. This led him to a framework of FDA where he not only recognized the importance of smoothing in the context of functional data but also the need to develop estimators for derivatives in order to quantify the underlying dynamics. Other topics that he pioneered in the context of FDA included robust smoothing, time warping and the utility of landmarks and shape-invariant modeling for samples of curves. These developments had a major impact on subsequent developments in FDA, where Jim Ramsay eventually coined the term "Functional Data Analysis". Nowadays FDA has become a major field in statistics with many ongoing developments and new data challenges. Theo Gasser was one of its founders.

By Alois Kneip, University of Bonn, Germany, and Hans-Georg Müller, University of California, Davis

Obituary: Colin Mallows

1930–2023

Colin Lingwood Mallows was born on September 10, 1930, in Great Sampford, a small village in Essex, England. His father was the village policeman, who later became Chief Inspector at the police headquarters in Chelmsford, responsible for education and record-keeping with regard to road safety. In this role his father developed some new statistical procedures, so perhaps this sparked Colin's interest.

In 1940, at the beginning of the Battle of Britain, Mallows' parents evacuated Colin and his brother to Cape Town, South Africa. He returned to England in 1945 and in 1948 began studying at University College London, in the Department of Mathematics. He soon moved to the Department of Statistics, founded by Karl Pearson in 1911 as the first ever statistics department and where modern statistics began. When Mallows began his studies, Egon Pearson was the Professor and the faculty included F.N. David, N.L. Johnson, and H.O. Hartley. Colin finished his PhD in 1953 under David and Johnson and all four parts of his thesis were published. For the following two years he served his National Service in the Royal Artillery.

While at University College, he met his wife Jean at a local dance in Essex, and the first thing he asked her, while the lights were getting dimmed, was whether she could trust him in the dark. The rest was history. Colin and Jean married in 1956 and continued folk dancing for many years.

Following his graduation, in quick succession followed one year at University College London, another year at Princeton University where John Tukey recruited him, and another two years at University College. Finally, in 1960 he joined Bell Labs, in Murray Hill, New Jersey. He felt that he had, as he put it, "lucked into the best job in the world" with early colleagues like John Tukey, Brad Murphy, Martin Wilk, Ram Gnanadesikan, Bill Williams, Dave Brillinger and Frank Anscombe. He really enjoyed the stimulating environment of Bell Labs. Contributing factors were that the management was highly technical and allowed researchers to explore new directions without constraints, combined with the presence of a constant stream of new problems and collaborations with colleagues in engineering and the mathematical, physical and social sciences. He was greatly influenced by John Tukey's path-breaking work on data analysis and invention of statistical tools such as box plots and stem-and-leaf diagrams. For years Colin taught data analysis courses based on these and other ideas at Bell Labs.

Later the statistical effort grew, and he and Ram Gnanadesikan became department heads at Bell Labs and recruited John Chambers, Siddhartha Dalal, Trevor Hastie, Jon Kettenring, Jim Landwehr, Vijay Nair, Yehuda Vardi and others. In 1995, at one more breakup of AT&T, he joined AT&T Labs, from which he formally retired in 2000 and then began consulting at Avaya Labs (a second-generation spin-off from AT&T).

Colin Mallows was a prolific researcher and wrote over 200 papers and several research notes, and was a co-inventor on five patents. He is probably most well known for inventing, with stimulation from Cuthbert Daniels, what came to be known as "Mallows C_p Statistic," a regression model diagnostic procedure which is still used every day around the world. He personally felt that C_p should be used only as a descriptive tool to assess whether a set of variables was as good as another one, and that min C_p should not be used as a criterion.

Colin Lingwood Mallows, with his wife Jean

"A Conversation with Colin L. Mallows" was published in the *International Statistical Review* in December, 2013 (vol. 81(3), pp. 338–360; https://www.jstor.org/stable/43299641). In this conversation Mallows described his approach to statistical problems, the Bell Labs research environment and how it appealed to him and enabled him to thrive, his work on AT&T regulation issues, how he approached research and mathematical problems in general, and other topics.

Besides C_p, he worked on rank models, regression diagnostics, network engineering, software engineering, stopping rules, inequalities, order statistics, robust statistics, smoothing, experimental designs, software testing, matrix methods, principles of data analysis, implementation of governmental regulations, privacy and security, coding theory, combinatorics, Apollonian packing and other topics with numerous colleagues across the world. Some of the problems were purely mathematical, though his approach was unique in that he always tried to think of relevant data which would give him insight into deeper mathematical arguments. A classic example of this was in the context of a challenging problem with a major prize posed by a famed mathematician, John Conway, on Conway Sequences. Colin solved the problem with his unique insights from data analysis and simulations.

He felt that statisticians were spending comparatively little time on the so-called "Zeroth problem"—the first problem being

Continues on **page 17**

the formation of specifications for the data; the second being design procedures for dealing with data that makes sense in context of the specification; and the third problem being distributional aspects and inference. Before all these, the "Zeroth problem" involves how one thinks about what data ought to be collected for the problem at hand. He wove these ideas into his COPSS Fisher Lecture at the 1997 Joint Statistical Meetings.

He always believed in looking at data before making any assumptions. Thus, he felt uncomfortable with Bayesian assumptions on prior distributions as well as truly believing the distributional model. Nevertheless, he often approached problems from a Bayesian perspective to identify a method of analysis and later on would question its assumptions.

He felt that statistics was similar to engineering, in that in engineering one has to deal with the real world—a bridge either stands up or it doesn't. In statistics, the procedure either makes sense and helps with the real problems or it doesn't. He felt that the statistics profession has opportunities everywhere, but it has sometimes been unwilling to take the lead on new emerging areas such as machine learning. Another concern he had was how best to teach applied statistics in the classroom.

Colin was a Fellow of the American Statistical Association, the Institute of Mathematical Statistics, and the Royal Statistical Society. As well as the Fisher Lecture in 1997, he was the ASA Deming Lecturer in 2004, and received the Wilks Memorial Award in 2007. He also received the AT&T Science and Technology medal in 1999.

Colin stayed interested and engaged in research until his final days. In the summer of 2023 he was approached by a psychologist researcher from many years ago in their Bell Labs days about reviving and revising a technical memorandum they had written and distributed internally at Bell Labs but never published. The revision was completed in August, with the most important change being the addition of some data—the original memorandum was purely theoretical. It is currently under review at a psychological journal.

One of his main hobbies was table tennis—he played in a league at a club in Westfield, New Jersey, at least one night a week for over fifty years. He competed well into his 80s. Another pleasure was writing limericks for special occasions. Colin and his wife owned a 70-acre farm in northwestern New Jersey for about 20 years. It was heavily wooded and they raised sheep. Colin fixed fences and really enjoyed cutting down trees.

Colin Mallows died on November 4, 2023, aged 93. He is survived by his wife of 67 years, Jean, three daughters, eight grandchildren, fourteen great-grandchildren; and one great-great grandson.

By Siddhartha Dalal and James Landwehr

Colin Mallows' Key Publications by Areas of Research:

Combinatorics: Mallows, C.L. and Wachter, K.W. Valency enumeration of rooted plane trees *J. Australian Math. Soc.*13, 472–476. (1972). **Covering designs:** Dalal, S.R. and Mallows, C.L. Factor-covering designs for testing software *Technometrics* 40, 234–243. (1998). **Inequalities:** Mallows, C.L. and Richter, D. Inequalities of Chebychev type involving conditional expectations *Ann. Math. Statist.* 40, 1922–1932. (1969). **Probability:** Mallows, C. 1. A note on asymptotic joint normality *Ann. Math. Statist.* 43, 508–515. (1972); Mallows, C.L. Sequential sampling of finite populations with and without replacement *SIAM J. Appl. Math.* 24, 164–168. (1973); Chambers, J.M., Mallows, C.L. and Stuck, B.W. A method for simulating stable random variables *JASA* 71, 340–344. (1976); Mallows, C.L. and Shepp, L.A. B–stability *J. Appl. Probab.* 42, 581–586 (2005). **Ranking:** Mallows, C.L. Non-null ranking models, I *Biometrika* 44, 114–130. (1957). **Robustness:** Denby, L. and Mallows, C.L. Two diagnostic displays for robust regression analysis *Technometrics* 19, .1–13. (1977); Hajek, Hoeffding, Tukey, and Von Mises, Summary of talks at Princeton, May 10, 1971. **Smoothing:** Mallows, C.L. Some theoretical results on Tukey's 3R smoother in *Smoothing Techniques for Curve Estimation* Lecture Notes #757, 77–90. Springer-Verlag. (1979); Mallows, C.L. Some theory of nonlinear smoothers *Ann. Statist.* 8, 695–715. (1980). **Applications:** Denby, L. Landwehr, J.M. and Mallows, C.L. An exercise in the real world of design and analysis *The American Statistician* 55, 263–271 (2001); Mallows, C.L. Parity: Implementing the Telecommunications Act of 1996 *Statistical Science* 17, 256–270. (With discussion, 271–285). (2002). **Foundation:** Mallows, C.L. and Walley, P. A theory of data analysis? *Pmc. Bus. and Econ. Stat. Sec., ASA (1980);* Draper, D.R, Hodges, J.S., Mallows, C.L. and Pregibon, D. Exchangeability and data analysis *J. Roy. Statist. Soc. Ser. A* 156, 9–28 (with discussion, 28–37) (1993); Mallows, C.L. The zeroth problem *The American Statistician* 52, 1–9. (1998). **Statistical Math:** Mallows, C.L. and Wachter, K.W. The asymptotic configuration of Wishart eigenvalues (abstract) *Ann. Math. Statis*t. 61 p. 1384 (1970); Denby, L. and Mallows, C.L. Singular values of large matrices subject to Gaussian perturbation *Proc. 23rd Symp. Interface,* 54–57. (1991). **Methods:** Mallows, C.L. Latent vectors of random symmetric matrices *Biometrika* 48, 133–149. (1961); Williams, W.H. and Mallows, C.L. The potential systematic behavior of some panel survey estimates *Proc. Soc. Stat. Sect., ASA,* 44–54. (1969); Mallows, C.L. Some comments on C_p *Technometrics* 15, 661–667. (1973) (Reprinted in *Technometrics* 42, .87–94 (2000), with introduction by R.F. Gunst, 62–64); Mallows, C.L. Augmented partial residuals *Technometrics* 28, 313–319. (1986); Cleveland, W.S., Mallows, C.L. and McRae, J.E. ATS methods: nonparametric regression for non-Gaussian data *JASA* 88, 821–835. (1993); Mallows, C.L., More Comments on C_p *Technometrics* 37, 362–372 (1995); Denby, L. and Mallows, C.L. Variations on the histogram *J Comp. and Graph. Statist.* 18, 21–31 (2009). **Stopping:** Dalal, S.R. and Mallows, C.L. When should one stop testing software? *JASA* 83, 872–879. (1988); Dalal, S.R and Mallows, C.L. Buying with exact confidence *Ann. Appl. Prob.* 2, 752–765. (1992)

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Call for Papers

JDS follows a timetable with three fixed submission deadlines. Visit the JDS website for details.

Bridging Research Communities

JDS is a new journal established to bridge research communities, jointly published by the Association of Computing Machinery (ACM) and the Institute of Mathematical Statistics (IMS). The journal publishes high-impact research from all areas of data science, across foundations, applications and systems. By combining elements of journal and conference publishing, JDS aims to serve the needs of a rapidly evolving research landscape.

Next deadline January 15

Recent papers: two open-access IMS/BS journals

Electronic Journal of Probability

The *Electronic Journal of Probability* (*EJP*) publishes full-length research articles in probability theory. Short papers should be submitted first to its sister journal, *Electronic Communications in Probability* (*ECP*); see below. *EJP* and *ECP* share the same editorial board, but with different Editors in Chief. The new Editor of *EJP* is Cristina Toninelli. *EJP* and *ECP* are open access official journals of IMS and the Bernoulli Society. ***Donations to the IMS Open Access Fund help to keep the journal free:*** https://www.imstat.org/shop/donation/. You can read the latest papers in Volume 28 (2023) at **https://projecteuclid.org/journals/electronic-journal-of-probability/current**

Electronic Communications in Probability

Electronic Communications in Probability (*ECP*) publishes short, peer-reviewed research articles in probability theory (typically shorter than 12 pages). *ECP* shares an editorial board with the *Electronic Journal of Probability*; the new Editor of *ECP* is Patrícia Gonçalves. *EJP* and *ECP* are open-access official journals of IMS and the Bernoulli Society. ***Donations to the IMS Open Access Fund help to keep the journal free:*** https://www.imstat.org/shop/donation/. Read the 61 papers in Volume 28 (2023) at **https://projecteuclid.org/journals/electronic-communications-in-probability/current**

IMS Awards: nominate or apply now

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, 2024: https://imstat.org/honored-ims-fellows/nominations-for-ims-fellow/

Nominations are also invited for the **Carver Medal**, created by the IMS in honor of Harry C. Carver, for exceptional service specifically to the IMS. Deadline February 1, 2024: https://www.imstat.org/ims-awards/harry-c-carver-medal/.

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 2018–23), 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, 2024.

The deadline to nominate an early-career researcher for the **Peter Gavin Hall Early Career Prize** (https://www.imstat.org/ims-awards/peter-gavin-hall-ims-early-career-prize/) or the **Tweedie New Researcher Award** (https://imstat.org/ims-awards/tweedie-new-researcher-award/) has passed (it was December 1) for next year's awards, but you can already be thinking about who to nominate for the following year. The **IMS Lawrence D. Brown PhD Student Award** is also open: the application deadline is May 1, 2024. Eligible applicants compete to be one of three speakers at an invited session as part of the IMS Annual Meeting (which will be the **2025 Joint Statistical Meetings**, in Nashville, USA, August 2–7, 2025).

IMS meetings around the world

Joint Statistical Meetings

2024 Joint Statistical Meetings
August 3–8, 2024
Portland, Oregon, USA
w https://ww2.amstat.org/meetings/jsm/2024/
Submit your idea for a Topic-Contributed Session
A topic-contributed session is planned in advance by one or more organizers and includes speakers presenting on a shared topic.
Topic-contributed sessions include papers, panels, and posters:

Topic-contributed paper sessions consist of five speakers, made up of at least three presenters and, at most, two discussants; each speaker has 20 minutes to present.

Topic-contributed panels consist of three to six members providing commentary or a point of view on the panel topic. Note: There are no individual abstracts/presentations in a panel session.

Topic-contributed poster sessions have 10–15 participants with posters addressing a common topic.

A topic-contributed session proposal includes a session title, general description of the session, list of participants, and tentative talk titles.
To propose a topic-contributed session (by December 7, 2023), please read the instructions on the JSM website at https://ww2.amstat.org/meetings/jsm/2024/topiccontributed.cfm.
Key dates are:

Topic-Contributed Session proposal submission deadline: December 7, 2023
Computer Technology Workshop proposal submission deadline: January 15, 2024
Contributed Abstract Submission: December 1, 2023 – February 1, 2024
Registration & Housing reservations open May 1, 2024.

JSM dates for 2025–2029 (no information yet for JSM2027)

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

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

IMS Annual Meeting @ JSM 2027
Dates and location to be confirmed

JSM 2028
August 5–10, 2028
Philadelphia, PA, USA

IMS Annual Meeting @ JSM 2029
August 4–9, 2029
Seattle, WA, USA

Ninth Workshop on Biostatistics and Bioinformatics NEW
May 3–5, 2024
Atlanta, GA
w https://math.gsu.edu/yichuan/2024Workshop/
Biostatistics and Bioinformatics have been playing very important roles in scientific research fields in recent years. The goal of the ninth workshop is to stimulate research and to foster the interaction of researchers in the research areas. The workshop will provide the opportunity for faculty and graduate students to meet the top researchers, identify important directions for future research, facilitate research collaborations. The keynote speaker is **Michael Kosorok**, University of North Carolina at Chapel Hill.

IMS Asia Pacific Rim Meeting 2024
January 4–7, 2024. Melbourne, Australia
w https://ims-aprm2024.com/
Providing an excellent forum for scientific communications and collaborations for researchers in Asia and the Pacific Rim, and those from other parts of the world.

At a glance:

forthcoming IMS Annual Meeting and JSM dates

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: TBC

JSM: Boston, MA, **August 1–6, 2026**

2027

IMS Annual Meeting @ JSM: Location TBA, **August [dates TBA], 2027**

More IMS meetings

UPDATED

2024 ENAR/IMS Spring Meeting
March 10–13, 2024
Baltimore, MD, USA
w https://www.enar.org/meetings/spring2024/

The 2024 ENAR/IMS Spring meeting has the theme *ENAR – A Home for Every Biostatistician.* Reneé H. Moore, ENAR 2024 President, says, "No matter whether you are a first-time attendee, a first-time attendee since the pandemic, or too-many- times-to-count attendee, our goal is that you find something exciting and relevant in the scientific and educational programs."

The Presidential Invited Address speakers are **Susan S. Ellenberg** (Perelman School of Medicine at the University of Pennsylvania), on "Statisticians and the COVID-19 Pandemic and **Adrian Coles** (Bristol Myers Squibb), on "We Are All in the People Business: A Marine's Reflection on Leadership."

The meeting takes place at the Baltimore Marriott Waterfront which is now accepting room reservations. See https://www.enar.org/meetings/spring2024/hotel.cfm

Baltimore's inner harbor at night

Theory and Foundations of Statistics in the Era of Big Data
April 19–21, 2024
Florida State University in Tallahassee, FL, USA
w https://sites.google.com/view/theory-and-foundations-of-stat/

Theory and Foundations of Statistics in the Era of Big Data is a conference hosted by the Department of Statistics, Florida State University, in coordination with the International Indian Statistical Association (IISA), to celebrate the birth centenary of Debabrata Basu and Raghu Raj Bahadur and to honor their fundamental contributions to statistics.

Plenary speakers are **Tony Cai**, Wharton School of the University of Pennsylvania; **Merlise A. Clyde**, Duke University; and **Xiao-Li Meng**, Harvard University.

There will be a Student Paper Competition. Students who are enrolled in an MS/PhD (or equivalent) program in Statistics, Data Sciences, or related fields by the deadline (to be announced) are eligible. Women and under-presented minorities are strongly encouraged to apply.

Registration will open soon.

Statistics in the Age of AI
May 9–11, 2024
Washington DC, USA
w https://statistics.columbian.gwu.edu/statistics-age-ai

The conference "Statistics in the Age of AI" aims to unite established academics, young researchers, and industry professionals in the field of Statistics to explore the impact of the new AI, especially Large Language Models, on both research and education in Statistics, and how Statistics can contribute to the new AI development. Some topics of the conference include efficient handling of data, uncertainty quantification, and responsible decision-making. The conference offers multiple oral sessions, a poster session, a panel discussion, and two short courses on causal inference and conformal inference respectively.

IMS annual meeting 2024:

UPDATED

Bernoulli–IMS 11th World Congress in Probability and Statistics
August 12–16, 2024, at Ruhr-University Bochum, Germany
w https://www.bernoulli-ims-worldcongress2024.org/

The Institute of Mathematical Statistics Annual Meeting will be held at the 11th World Congress. The plenary speakers have been announced. The Wald lectures will be given by **Peter Bühlmann**, ETH Zurich, and the Le Cam lecturer is **Peter Bickel**, University of California, Berkeley. Four IMS Medallion lectures will be given by **Moulinath Banerjee**, University of Michigan, Ann Arbor; **Marc Hallin**, Université Libre de Bruxelles; **Remco van der Hofstad**, TU Eindhoven; and **Chunming Zhang**, University of Wisconsin–Madison. There will be two IMS–BS Schramm lectures, from **Patricia Gonçalves**, Instituto Superior Técnico, Lisbon, and **Nina Holden**, Courant Institute, New York University. The IMS–BS Doob lecture will be given by **Pablo Ferrari**, University of Buenos Aires. The BS lectures are as follows: **Emmanuel Candès**, Stanford (Bernoulli lecture); **Victor Chernozhukov**, MIT (Cox lecture); **Rafal Latala**, University of Warsaw (Kolmogorov lecture); **Xihong Lin**, Harvard (Laplace lecture); **Mihaela van der Schaar**, Univ. Cambridge (Tukey lecture); and **Rongfeng Sun**, National University of Singapore (Lévy lecture). *NEW:* There will also be an **Ising Lecture** by **Frank den Hollander**.

More IMS meetings

International Symposium on Nonparametric Statistics (ISNPS 2024)
June 25–29, 2024
Braga, Portugal
w https://w3.math.uminho.pt/ISNPS2024/

We are pleased to announce that the next International Symposium on Nonparametric Statistics will be held in Braga, Portugal, from June 25–29, 2024. The venue is Altice Forum Braga, a conference site which is situated 15 minutes walk from the city center of Braga.

Inspired by the success of the previous Nonparametric conferences in Chalkidiki (Greece, 2012), Cadiz (Spain, 2014), Avignon (France, 2016), Salerno (Italy, 2018) and Paphos (Cyprus, 2022), the conference will bring forth recent advances and trends in several areas of nonparametric statistics, in order to facilitate the exchange of research ideas, promote collaboration among researchers from all over the world, and contribute to the further development of the field.

The program will include plenary talks, special invited talks, invited talks, contributed talks and a poster session on all areas of nonparametric statistics.

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.

WNAR / IMS / Graybill 2024 UPDATED
June 9–12, 2024
Fort Collins, Colorado, USA
w https://wnar.org/wnar2024

The 2024 meeting of the Western North American Region of the IBS will be held jointly with the 2024 Graybill Conference. There will be short courses, a plenary lecture, Graybill keynote speech and keynote panels from international regulators, invited and contributed sessions, young investigator events, and a Student Paper Award with oral sessions.

Fort Collins is 65 miles north of Denver, approximately 45 minutes from the Rocky Mountain National Park. The city has a thriving arts scene and an extensive mix of outdoor recreation activities. Learn about this beautiful area at www.visitftcollins.com.

Call for Invited Session proposals: deadline January 10, 2024

See link at meeting website to submit your idea. Each invited session can include four speakers, or three speakers and one discussant. Initial submissions require a title, description/motivation of the session, names, affiliations, and emails of session chair and speaker. WNAR/IMS/Graybill believes that diverse perspectives increase the quality of sessions and the conference overall. As such, we would like to highlight sessions that showcase diversity in their speakers or topics. We encourage session organizers to include a diverse set of speakers or topics.

The local organizer is Wen Rick Zhou, Colorado State University. Email wnar@wnar.org with any questions. Prince Allotey (UW) and Catherine Lee (Kaiser Permanente) are the WNAR Program Chairs, Jie Peng (UC Davis) is the IMS Chair, Wen Zhou (Colorado State) is the Local Organizer and Graybill Co-organizer, Jingling Ye (BeiGene) is the Graybill Program chair, and Kayleigh Keller (Colorado State) is the Student Competition Chair. Email wnarprogramchair@gmail.com with questions.

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

2024 Seminar on Stochastic Processes (SSP)

UPDATED

March 13–16, 2024
Houston, TX, USA

w https://ssp2024.rice.edu/

The Seminar on Stochastic Processes is a series of annual conferences devoted to stochastic analysis, Markov processes and other topics in probability theory of current interest. Every conference features five invited speakers and provides opportunity for short informal presentations of recent results and open problems.

Apart from informal presentations by conference participants, there will be plenary talks by **Tom Hutchcroft**, **Etienne Pardoux**, **Sébastien Roch [IMS Medallion Lecture]**, **Ludovic Tangpi**, and **Yilin Wang**. The main conference will be held on March 14–16, 2024, on the campus of Rice University in Houston, TX, USA. On March 13, there will be a special set of tutorial lectures and discussions targeted at early-career researchers; the tutorial lecturer is **Perla Sousi** (University of Cambridge).

This conference will be supported with funds to allow reimbursement of travel expenses. Graduate students, early-career researchers, women, and members of underrepresented groups are especially encouraged to register and apply for funds. Applications are accepted with registration via the conference website. SSP 2024 will be held in person, though remote participation may be made available for mobility accommodation. For information on funding, including the registration form, see https://ssp2024.rice.edu/ Accommodation and travel details coming soon.

Fifth International Workshop on the Statistical Analyses of Multi-Outcome Data

July 9–10, 2024. Salzburg, Austria

w https://sam-workshop.github.io/SAM_2024/

The fifth international workshop on Statistical Analyses of Multi-Outcome Data (SAM 2024), will take place in Salzburg, Austria, on July 9–10, 2024. Salzburg, Mozart's birthplace and the picturesque setting for *The Sound of Music*, is a spectacularly scenic city and an ideal destination for a summer visit. Our workshop covers a broad range of topics, such as complex longitudinal and survival data analysis, high-dimensional data analysis, precision medicine, and artificial intelligence/ machine learning methods, among others. The workshop will have two keynotes (Ian McKeague and Markus Pauly), 24 invited sessions, and a poster session. A banquet will be held on July 9.

Scenic Salzburg hosts SAM 2024

Other meetings and events around the world

International Conference on Operations Research and Game Theoretic Approach in Decision Making

January 17–19, 2024
New Delhi, India

https://www.isid.ac.in/~icorgtdm24/

The objective of this conference is to provide a forum for new developments and applications of Operations Research and game theory. This conference will provide an excellent opportunity to disseminate the latest major achievements and to explore new directions and perspectives, and is expected to have a broad international appeal, dealing with topics of fundamental importance in Operations Research and other related sciences (Economics, Physics, Management Science and Engineering).

Unlocking the potential: The IMA AI/ML Congress 2024

September 4–5, 2024, Birmingham, UK

https://ima.org.uk/23193/unlocking-the-potential-the-ima-ai-ml-congress-2024/

The Institute of Mathematics and its Applications (IMA) presents the AI/ML Congress 2024, an inclusive gathering of academics, industrialists, and AI enthusiasts from diverse fields. Explore the limitless possibilities of AI and ML through engaging presentations, panel discussions, and unparalleled networking opportunities.

Call for mini-symposiums: interested in organising a session? A mini symposium consists of three/four 20-minute talks on a relevant topic. Complete this form https://forms.office.com/e/bJqD6yvvbU with 300 word abstract. Deadline 16 January 2024

12th General AMaMeF conference

June 23–27, 2025
Verona, Italy

https://sites.google.com/view/amamef2025/

The program will consist of plenary lectures, invited and contributed sessions, and posters, addressing a full range of topics in mathematical finance (MF) and its applications.

AMaMeF is an acronym for Advanced Mathematical Methods for Finance. It is a European network of researchers promoting the exchange and diffusion of knowledge in the field of Mathematical Finance. See https://amamef.impan.pl/index.html

Other meetings and events around the world

2024 Statistics Winter Workshop on Causal Inference and its Application
January 19–20, 2024
Gainesville, USA
https://stat.ufl.edu/winter-workshop/2024-causal-inference-and-its-applications/
This year, the University of Florida Statistics Department is excited to co-organize with the Department of Economics our annual Winter Workshop focusing on causal inference. Causal inference is an important and active area of research with applications in a wide range of scientific areas. Statistical and econometric methodology for inferring causality from observational data is therefore a crucially important endeavor. This workshop brings together top researchers in the fields of economics and statistics who work at the forefront of both methodological development and the application of causal inference methodology to address important problems in applied research.

There will be a conference poster session for young researchers and travel awards to select junior researchers to help them attend the workshop.

The 2024 Workshop on Statistical Network Analysis and Beyond (SNAB 2024)
June 14–16, 2024
Nassau, Bahamas
https://sites.google.com/view/snab2024
Over the span of three days, this workshop aims to unite researchers in the field of network science and related disciplines, providing an avenue for the exchange of innovative ideas and recent findings. The workshop will encompass a wide range of topics, ranging from statistical network modeling to more extensive fields such as tensor modeling, deep learning, and text analysis.

Spatial and Temporal Statistical Modeling in Molecular Biology
September 8–13, 2024
Ascona, Switzerland
https://spatialbio.net
Looking at statistical, computational and machine learning methods and applications to spatial biological data at different length scales, from the nucleus and spatial omics of tissues to ecosystems and planetary-scale biology.

44th International Symposium on Forecasting
June 30–July 3, 2024, Dijon, France
https://isf.forecasters.org/
The International Symposium on Forecasting (ISF) is the premier forecasting conference, attracting the world's leading forecasting researchers, practitioners, and students. Through a combination of keynote speaker presentations, academic sessions, workshops, and social programs, the ISF provides many excellent opportunities for networking, learning, and fun.

2024 CMI–HIMR Summer School on Symmetry and Randomness
July 15–19, 2024, Bristol, UK
https://heilbronn.ac.uk/2023/10/27/cmi-himr-summer-school-2024/
This year the summer school will focus on the mathematics of symmetry and randomness, where probability theory comes together with analysis, geometry and group theory to help understand highly symmetric structures. The mini-courses will present aspects of random walks on infinite graphs and groups in connection with geometric group theory; the mathematics of percolation theory especially on large transitive graphs; as well as spectral and mixing time estimates for finite Markov chains with an emphasis on the cut-off phenomenon, and much more. Students will be introduced to these topics and hear lectures by leading figures in the area.

Royal Statistical Society 2024 International Conference
September 2–5, 2024, Brighton, UK
https://rss.org.uk/training-events/conference-2024/
The RSS conference brings together the statistics and data science community from across the UK, Europe and around the world to share knowledge and learn about latest developments. With over 600 attendees from around 30 countries and all sectors using statistics and data, this is a must-attend event for professionals, researchers, students and everyone interested in the impactful application of statistics and data science. As usual, the conference programme will feature top keynote speakers, invited topic sessions, professional development workshops, contributed and rapid-fire talks, and poster presentations, as well as many opportunities for networking.

Tenth International Conference on Control, Decision and Information Technologies (CoDIT 2024)
July 1–4, 2024, Valletta, Malta
https://codit2024.com
The CoDIT 2024 Conference will have a hybrid format, with opportunities for both online and onsite participation at the University of Malta.

Call for Papers: https://codit2024.com/Call_for_Papers_CoDIT2024.pdf
Papers submission deadline: February 3, 2024. Acceptance notification: April 14, 2024.

Employment Opportunities

Canada: Winnipeg
University of Manitoba
Assistant Professors in Statistics and Data Science
https://jobs.imstat.org/job//71398879

China: Guangzhou
Financial Technology Thrust, The Hong Kong University of Science and Technology (Guangzhou campus)
Open-rank faculty positions in Fintech, Financial Engineering, Mathematical Finance, Quantitative Finance, Operations Research, and Information
https://jobs.imstat.org/job//71060079

Denmark: Aarhus
Department of Mathematics, Aarhus University
Tenure Track Assistant Professor/ Associate Professor in Statistics
https://jobs.imstat.org/job//71692048

Denmark: Copenhagen
Faculty of Engineering and Science, Aalborg University
Head of Department of Mathematical Sciences
https://jobs.imstat.org/job//71569349

India: Mohali, Punjab
Plaksha University
Professor / Associate Professor / Assistant Professor of Applied Mathematics
https://jobs.imstat.org/job//70988614

Switzerland: Bern
Institute of Mathematical Statistics and Actuarial Science of the University of Bern
Professorship in Applied Stochastics
https://jobs.imstat.org/job//71330177

UK: Coventry
University of Warwick
Assistant Professor (Harrison Early Career) (108284-1123)
https://jobs.imstat.org/job//71529300

United Kingdom: Coventry
University of Warwick
Assistant Professor ×2, Computational Statistics or Machine Learning (31514-1023)
https://jobs.imstat.org/job//71248872

United Kingdom: Coventry
University of Warwick
Assistant Professor, Statistics ×3 (78716-1023)
https://jobs.imstat.org/job//71248847

United Kingdom: Warwick
University of Warwick
Associate Professor (100797-1023)
https://jobs.imstat.org/job//71248743

United States: Tempe, AZ
Arizona State University
Postdoctoral Research Scholar
https://jobs.imstat.org/job//71387375

United States: Berkeley, CA
University of California Berkeley
Assistant Professor - Public Health Data Science - School of Public Health
https://jobs.imstat.org/job//71302163

United States: Berkeley, CA
University of California Berkeley
Neyman Visiting Assistant Professor - Statistics
https://jobs.imstat.org/job//71302147

United States: Berkeley, CA
University of California, Berkeley - Department of Statistics
Lecturer in Statistics - Department of Statistics - College of Computing, Data Science and Society
https://jobs.imstat.org/job//70466260

United States: La Jolla, CA
University of California San Diego
Assistant Professor - Chancellor's Joint Initiative: Data Science and Public Policy (HDSI/GPS)
https://jobs.imstat.org/job//71220223

United States: La Jolla, CA
University of California San Diego
Assistant Teaching Professor - HDSI
https://jobs.imstat.org/job//71242078

Employment Opportunities continued

United States: New York, NY

Columbia University
Department of Statistics
Founder's Postdoctoral Fellowship in Statistics, starting Fall 2024

Position Description: The Department of Statistics invites applications for the 2024 Founder's Postdoctoral Fellowship in Statistics at Columbia University. This fellowship seeks to bring exceptional scientists of outstanding potential to Columbia University. This two-year fellowship, with no teaching obligations, is to begin between July and September 2024. The Fellow will hold the rank of postdoctoral research scientist in the Department of Statistics. A competitive annual salary will be supplemented with generous funding for conference travel and research support.

Applications in all areas of statistics and probability will be considered: the primary selection criterion will be the candidates' exceptional promise to produce high quality and visible research. Candidates must have a PhD in statistics or related field by the date of appointment. Fellows will be expected to pursue a vigorous research agenda and to participate actively in the intellectual life of the Department.

The Department currently consists of 38 faculty members and 55 PhD students. The department has been expanding rapidly and, like the University itself, is an extraordinarily vibrant academic community. We are especially interested in candidates who, through their research, teaching and/or service, will contribute to the diversity and excellence of the academic community. Women and minorities are especially encouraged to apply. For further information about the department and our activities, centers, research areas, and curricular programs, please go to our web page at: http://www.stat.columbia.edu

Qualifications:
PhD in statistics or related field by the date of appointment
Application Instructions:
All applications must be submitted through Columbia's online Academic Search and Recruiting portal (ASR).
http://apply.interfolio.com/136121. The application must include the following:

- A cover letter that explains your motivation for applying for this position and indicates your choice of mentors from the statistics faculty.
- A curriculum vitae (including a list of publications)
- A brief research statement that summarizes current research interests, past accomplishments, and future research goals. It should contain a short proposal for the research activities you plan to conduct while at Columbia.
- The names of 3 references—references will be asked to upload letters of recommendation in ASR.

Review of applications begins on January 13, 2024, and will continue until the position is filled.
Inquiries may be made to Dood Kalicharan at dk@stat.columbia.edu.
Salary range:
$70,000–$100,000. The salary of the finalist selected for this role will be set based on a variety of factors, including but not limited to departmental budgets, qualifications, experience, education, licenses, specialty, and training. The above hiring range represents the University's good faith and reasonable estimate of the range of possible compensation at the time of posting.
Equal Employment Opportunity Statement:
Columbia University is an Equal Opportunity Employer / Disability / Veteran.

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United States: Los Angeles, CA

University of California Los Angeles

Tenure-Track Assistant Professor position in Pure Mathematics 2024-2025

https://jobs.imstat.org/job//71240851

United States: Los Angeles, CA

University of Southern California, Department of Mathematics

Faculty Positions

https://jobs.imstat.org/job//71067829

United States: Golden, CO

Colorado School of Mines

Department Head and Professor - Department of Applied Mathematics and Statistics

https://jobs.imstat.org/job//71485037

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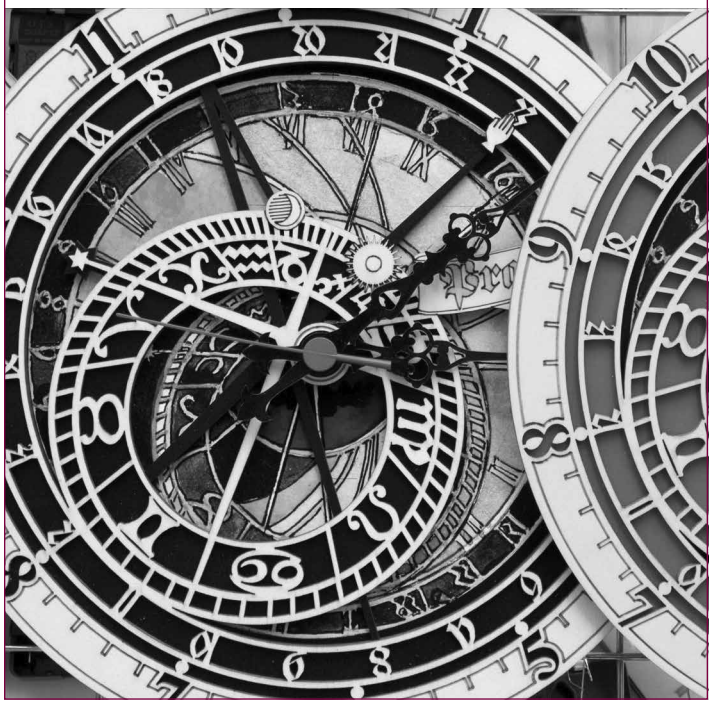

United States: Storrs, CT

University of Connecticut

Assistant or Associate Professor, Statistics

https://jobs.imstat.org/job//71252681

United States: Storrs, CT

University of Connecticut

Assistant Professor, Statistics

https://jobs.imstat.org/job//71386347

United States: Gainesville, FL

University of Florida, Department of Statistics

Lecturer in Statistics (advanced undergraduate)

https://jobs.imstat.org/job//71529936

United States: Chicago, IL

University of Chicago

Preceptor in Data Science

https://jobs.imstat.org/job//71087907

United States: Chicago, IL

University of Chicago

Senior Instructional Professor (open rank) Data Science

https://jobs.imstat.org/job//71162088

United States: Chicago, IL

UChicago Data Science Institute

Postdoctoral Scholar - Data Science

https://jobs.imstat.org/job//71177452

United States: Chicago, IL

University of Chicago

Instructional Professor (open rank) in Data Science

https://jobs.imstat.org/job//71599702

United States: Chicago, IL

University of Chicago

Associate Professor

https://jobs.imstat.org/job//71591023

United States: Chicago, IL

University of Chicago

Assistant Professor

https://jobs.imstat.org/job//71591008

Employment Opportunities continued

United States: Chicago, IL
UChicago Data Science Institute
Associate Professor or Professor, Data Science
https://jobs.imstat.org/job//71387919

United States: Baltimore, MD
University of Maryland Baltimore County
Lecturer in Applied Math
https://jobs.imstat.org/job//71399084

United States: Wilmington, NC
University of North Carolina Wilmington
Assistant or Associate Professor - Statistics
https://jobs.imstat.org/job//71453229

United States: New Brunswick, NJ
Department of Statistics Rutgers University–New Brunswick, School of Arts & Sciences
Department of Statistics - Faculty Positions
https://jobs.imstat.org/job//71326262

United States: Binghamton, NY
Binghamton University, Department of Mathematics and Statistics
Assistant Professor
https://jobs.imstat.org/job//71262698

United States: Upton, NY
Brookhaven National Laboratory
Postdoc - Computational Science
https://jobs.imstat.org/job//71262834

United States: Akron, OH
The University of Akron
Assistant Professor Statistics
https://jobs.imstat.org/job//71228418

United States: Brookings, SD
South Dakota State University
Assistant Professor of Statistics
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United States: Houston, TX
Rice University
Assistant Professor in Statistics
https://jobs.imstat.org/job//71293382

United States: Houston, TX
Rice University
Assistant or Associate Professor in Statistics
https://jobs.imstat.org/job//71316189

United States: Charlottesville, VA
University of Virginia, Department of Statistics
Two positions: One tenure-track Assistant Professor and one tenured Associate Professor
https://jobs.imstat.org/job//71230765

United States: Seattle, WA
University of Washington, Department of Statistics
Acting Assistant Professor in Statistics
https://jobs.imstat.org/job//71331821

United States: Seattle, WA
UW, Dept. of Statistics (Box 354322)
Assistant Teaching Professor
https://jobs.imstat.org/job//71330494

United States: Seattle, WA
Fred Hutchinson Cancer Center
Biostatistics Program Head
https://jobs.imstat.org/job//71531078

United States: Seattle, WA
University of Washington
Assistant Teaching Professor, Biostatistics
https://jobs.imstat.org/job//71464127

United States: Madison, WI
UW Madison
Assistant Professor, Associate Professor, or Professor in Statistics
https://jobs.imstat.org/job//71220286

::: Advertise current job opportunities for only $355 for 60 days ::: See https://jobs.imstat.org for details :::

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

January 2024

ims January 4–7: Melbourne, Australia. **IMS Asia Pacific Rim Meeting (IMS-APRM2024)** **w** http://ims-aprm2024.com/

NEW January 17–19: New Delhi, India. **Operations Research and Game Theoretic Approach in Decision Making** **w** https://www.isid.ac.in/~icorgtdm24/

NEW January 19–20: Gainesville, USA. **Winter Workshop on Causal Inference and its Application** **w** https://stat.ufl.edu/winter-workshop/2024-causal-inference-and-its-applications/

January 22–24: Soesterberg, The Netherlands. **21st Winter School on Mathematical Finance** **w** https://staff.fnwi.uva.nl/a.khedher/winterschool/winterschool.html

February 2024

February 5–9: **Decision Making and Uncertainty** **w** https://www.imsi.institute/activities/decision-making-and-uncertainty-2024

February 27–March 1: Trieste, Italy. **Uncertainty Quantification** **w** https://www.siam.org/conferences/cm/conference/uq24

March 2024

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

March 13–16: Houston TX, USA. **2024 Seminar on Stochastic Processes** **w** https://depts.washington.edu/ssproc/

April 2024

ims April 19–21: Tallahassee, USA. **Theory and Foundations of Statistics in the Era of Big Data** **w** https://sites.google.com/view/theory-and-foundations-of-stat/

May 2024

NEW ims May 3–5: Atlanta, USA. **9th Workshop on Biostatistics and Bioinformatics** **w** https://math.gsu.edu/yichuan/2024Workshop/

ims May 9–11: Washington DC, USA. **Statistics in the Age of AI** **w** https://statistics.columbian.gwu.edu/statistics-age-ai

May 15–17: Mexico City, Mexico. **2024 IAOS–ISI Conference** **w** https://www.isi-next.org/conferences/iaos-isi-2024/

May 21–24: Orem, UT, USA. **Eighth International Workshop in Sequential Methodologies** **w** https://www.uvu.edu/math/events/iwsm2024/index.html

June 2024

June 3–7: Lima, Peru. **SAE 2023–2024 Conference** **w** https://sae2023.pucp.edu.pe/

ims June 9–12: Fort Collins, Colorado, USA. **WNAR2024, joint with Graybill Conference** **w** https://wnar.org/meetings

NEW June 14–16: Nassau, Bahamas. **Statistical Network Analysis and Beyond (SNAB2024).** **w** https://sites.google.com/view/snab2024

ims June 25–29: Braga, Portugal. **International Symposium on Nonparametric Statistics (ISNPS 2024)** **w** https://w3.math.uminho.pt/ISNPS2024/

Continues on **page 30**

International Calendar *continued*

June 2024 continued

NEW June 30–July 3: Dijon, France. **44th International Symposium on Forecasting** w https://isf.forecasters.org/

July 2024

NEW July 1–4: Valletta, Malta. **Tenth International Conference on Control, Decision and Information Technologies** (CoDIT 2024) w https://codit2024.com

July 1–7: Venice, Italy. **ISBA World Meeting 2024** *NEW WEBSITE* w https://www.unive.it/web/en/2208/home

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

ims July 9–10: Salzburg, Austria. **Fifth International Workshop on the Statistical Analyses of Multi-Outcome Data** w https://sam-workshop.github.io/SAM_2024/

NEW July 15–19: Bristol, UK. **Summer School on Symmetry and Randomness** w https://heilbronn.ac.uk/2023/10/27/cmi-himr-summer-school-2024/

August 2024

ims August 3–8: Portland, OR, USA. **JSM 2024** w https://ww2.amstat.org/meetings/jsm/2024/

ims August 12–16: Bochum, Germany. **Bernoulli/IMS World Congress in Probability and Statistics** w https://www.bernoulli-ims-worldcongress2024.org/

August 18–23: Banff, Canada. **BIRS Workshop on Causal Inference and Prediction for Network Data** w https://www.birs.ca/events/2024/5-day-workshops/24w5244

September 2024

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

NEW 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/

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

June 2025

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

July 2025

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

August 2025

ims August 2–7: Nashville, TN, USA. **IMS Annual Meeting at JSM 2025** w www.amstat.org/meetings/joint-statistical-meetings

August 2026

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

August 2027

ims Dates TBA: Location TBA. **IMS Annual Meeting at JSM 2027** w www.amstat.org/meetings/joint-statistical-meetings

August 2028

ims August 5–10: Philadelphia, PA, USA. **JSM 2028** 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.

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

the next issue is March 2024

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DEADLINES for submissions

February 1, then **March 15**

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IMS: Organized September 12, 1935

Ann. Appl. Prob. Dec 2023
https://projecteuclid.org/aap

(print)
(online)

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An Official Journal of the
Institute of Mathematical Statistics

Articles

Continued on back cover

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