

September 2022

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## IMS Presidential Address

Each year, at the end of their term, the IMS President gives an address at the Annual Meeting. The 2021–22 President, **Krzysztof Burdzy**, gave the following address at the IMS Annual Meeting in London in June.



2021–22 IMS President Chris Burdzy in Zoom mode

My presidential address is risqué... I am going to talk about a narrow topic in the philosophy of probability. My main point is a piece of practical advice. **We should stop using the term “subjective” in reference to any part of statistics.**

Let me start by presenting the context of my remarks. “Philosophy of probability” is a misnomer. In the IMS community, it should be called “philosophy of statistics” because the term “probability” is applied to a field of mathematics and “statistics” refers to both mathematical statistics and a branch of science dealing with data. Hence, by publishing two books on philosophy of probability, I contributed indirectly to statistics. The books were *The Search for Certainty. On the Clash of Science and Philosophy of Probability* (2009) and *Resonance: From Probability to Epistemology and Back* (2016). My main theses presented in the books were:

- (i) Bruno de Finetti’s subjective philosophy of probability and Richard von Mises’ frequency philosophy of probability make no sense whatsoever.
  - (ii) Frequency statistics and Bayesian statistics are excellent branches of science.
  - (iii) The only way to reconcile (i) and (ii) is to admit that de Finetti’s and von Mises’ philosophical theories have nothing in common with statistics as we know it.
- I insist that we should stop using the term “subjective” in reference to any part of statistics. In this address, my objection to the term “subjective” is more of a linguistic nature rather than philosophical nature. I listed 13 interpretations of the word “subjective” in my 2009 book, all of them in the context of philosophy of probability. Here, I will focus on two most relevant senses of “subjectivity”:
- (i) “**Happy subjectivity**,” meaning unfettered freedom. What genre of music is the best: classical, jazz or rap? Your answer is completely arbitrary and it depends only on how you feel in the moment.
  - (ii) “**Dark subjectivity**” is a contaminant of rational thinking. I will illustrate it by citing the book *The Subjectivity of Scientists and the Bayesian Approach* by S. James Press and Judith M. Tanur (2016). The authors devoted a chapter to each of about 15 top scientists of all time, including Aristotle, Galileo, Newton, Darwin, Pasteur, Freud, Einstein, and Curie. Every case was different, but every scientist discussed in the book took an action or made a statement that we would nowadays

Continues on **page 4**

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## IMS Members' News

### National Academy of Sciences elects Members

The US National Academy of Sciences (NAS) has elected 120 members and 30 international members at the conclusion of the Academy's 159th Annual Meeting in May 2022. Among those elected this year were:

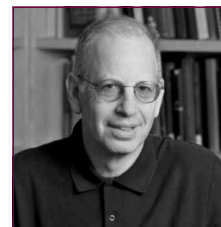
**Amir Dembo**, professor of mathematics and statistics and the Marjorie Mhoon Fair Professor of Quantitative Science, in the department of mathematics at Stanford University;

**Alice Guionnet**, Research Director at CNRS, École Normale Supérieure de Lyon (citizen of France); and

**Sara van de Geer**, full professor and chair of the Seminar for Statistics in the department of mathematics, ETH Zürich (citizen of The Netherlands).

Members are elected to the NAS in recognition of their distinguished and continuing achievements in original research. Membership is a widely accepted mark of excellence in science and is considered one of the highest honours that a scientist can receive.

Those elected bring the total number of active members to 2,512 and the total number of international members to 517. International members are nonvoting members of the Academy, with citizenship outside the United States.



Amir Dembo



Alice Guionnet



Sara van de Geer

### Alain-Sol Sznitman awarded Blaise Pascal Medal from European Academy of Sciences

**Alain-Sol Sznitman** (ETH Zurich) is the recipient of the 2022 Blaise Pascal Medal in Mathematics.



Alain-Sol Sznitman

The European Academy of Sciences established the Blaise Pascal Medal in 2003 to recognize outstanding scientists who have demonstrated personal contributions to science and technology and the promotion of excellence in research and education. Up to six medals may be awarded in any one year. The awards ceremony will take place in Bruxelles (Brussels) on October 24–25, 2022.

### COPSS Awards at JSM

The Committee of Presidents of Statistical Societies presented its awards at the Joint Statistical Meetings. The COPSS Presidents' Award was given to **Daniela Witten**; you can read an interview with her by Amita Manatunga and Maya Sternberg on page 8. The other awards were presented to **Madhu Mazumdar** (the Elizabeth L. Scott Award); **Nancy Reid** (the COPSS Distinguished Achievement Award and Lectureship); and to **Xi Chen, Natalie Dean, Davina Durgana, Philip Ernst, Pierre Jacob, Kristian Lum,**

**Lester Mackey,**  
and **Betsy Ogburn**  
(elected to the  
COPSS Leadership  
Academy).

### Photos from JSM

Selected photos from this year's Joint Statistical Meetings in Washington DC (August 7–10) are available on the ASA's Flickr page: <https://www.flickr.com/photos/187299426@N05/albums>.

# IMS Members' News

## Marc Hallin awarded Pierre-Simon de Laplace Prize

IMS Fellow **Marc Hallin**, professor emeritus at the Université libre de Bruxelles, was honored recently with the Pierre-Simon de Laplace Prize, the highest scientific distinction awarded by the French Statistical Society (Société française de Statistique, SFS). It is awarded every three years.

Pascal Massart writes, “A prominent figure of mathematical statistics worldwide, and a worthy perpetuator of Lucien Le Cam’s work, Marc Hallin has made fundamental contributions to the optimality of rank-based tests, local asymptotic normality properties, multivariate quantiles, and, recently, the theory of measure transportation. Hallin excels in explaining deep results to a broad-spectrum audience in an intelligible way without lapsing into caricature. A distinctive feature of his activity is his interdisciplinary curiosity and his ability to create links between various fields. His network of international collaborators is impressively wide and his impact on our discipline is considerable. His scientific generosity, which has been appreciated by generations of students, and his investment in the service to the statistical community in general—the Société française de Statistique in particular—are outstanding. Hallin, above all, is the embodiment of a humanistic approach to science that never waned throughout his long career.”



Marc Hallin

The prize recognizes Marc Hallin’s outstanding academic career in the Department of Mathematics, the Institute of Statistics, and the European Center for Advanced Research in Economics and Statistics at the University of Brussels (ULB).

Prof. Marc Hallin is an Elected member of the International Statistical Institute, Fellow of the Institute of Mathematical Statistics and of the American Statistical Association, Member of the Classe des Sciences of the Royal Academy of Belgium. He has received several distinctions, including the Medal of the Faculty of Mathematics and Physics of Charles University in Prague. He is the author of over 220 papers in the *Annals of Statistics*, *Bernoulli*, *JASA*, the *Journal of Econometrics*, and *JRSS B*, and the former co-Editor-in-Chief of the ISI flagship journal *International Statistical Review*. His research interests are in mathematical statistics, particularly semiparametric and rank-based inference, statistical depth, quantile-oriented models, and measure transportation. He has also made significant contributions in time series and time series econometrics, with special focus on factor models in the analysis of high-dimensional time series.

The Pierre-Simon de Laplace Prize will be awarded to him at the annual colloquium of the French Statistical Society to be held next June in Lyon. Previous winners include Luc Devroye (McGill) in 2019, Emmanuel Candès (Stanford) in 2016, and Christian Gouriéroux (CREST and Toronto) in 2013.

 = 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>

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*Statistical Science*: Sonia Petrone

<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*: Bénédicte Haas

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


*Electronic Communications in Probability*:

Siva Athreya

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

*Journal of Computational and Graphical Statistics*:

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

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


*Probability Surveys*: Mikhail Lifshits

<https://imstat.org/ps>

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

*Statistics Surveys*: Marloes Maathuis

<https://imstat.org/ss>

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

## IMS-Supported Journals


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

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


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

Giambattista Giacomini, Yueyun Hu

<https://imstat.org/aihp>

 <https://projecteuclid.org/aihp>

*Bayesian Analysis*: Mark Steel

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

*Bernoulli*: Davy Paindaveine

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

 <https://projecteuclid.org/bj>

*Brazilian Journal of Probability and Statistics*:


Mário de Castro

<https://imstat.org/bjps>

 <https://projecteuclid.org/bjps>


## IMS-Affiliated Journals

*Observational Studies*: Nandita Mitra

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

*Probability and Mathematical Statistics*:

Krzysztof Bogdan, Krzysztof Dębicki

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

*Stochastic Systems*: Shane Henderson

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

# IMS Presidential Address 2022

*Continued from cover*

consider unscientific. (The title of the book suggested to me that the authors might have been anti-Bayesian. In fact, they are Bayesians. They included an extra chapter in their book with Bayesian advice to future scientists on how to avoid errors committed by the historical figures.)

So, I argue that Bayesian statistics is not subjective in either of these senses of the word. First, let's talk about happy subjectivity. Nobody will be appalled if someone says, "I am listening to jazz because today is Tuesday and I am in a good mood." Actually, you do not have to give any reason for listening to jazz, but you can if you want to. Can a Bayesian statistician choose  $\text{Beta}(7,32)$  prior because today is Tuesday and she is in a good mood?

The case of dark subjectivity, this contaminant of rational thinking, is more complicated. Some critics of Bayesian statistics claimed that Bayesian statistics, or more specifically Bayesian priors, is/are subjective; there is no place for subjectivity in science; therefore, Bayesian statistics is not a science. What I see in practice is that Bayesian statisticians make every effort to remove "dark subjectivity" from their prior distributions. As a result, Bayesian statistics is not any more subjective than any other science.

So far I have discussed my long-term obsessions. Now I will list some of my greatest current concerns. These four events, in chronological order, have shaken the whole world, and my personal world:

- (i) Covid,
- (ii) the murder of George Floyd, and anti-racism protests,
- (iii) the 2020 US presidential elections,
- (iv) the Russian invasion of Ukraine.

These events are complex and completely different. What they have in common is that in each case, large populations have contradictory beliefs about factual matters. I emphasized "factual" because we are not scandalized by people having diverse views on politics, religion or social matters. In relation to Covid, let me point out that a large group of people believe that vaccines cause autism. In relation to the US presidential elections, note that a large part of the US population believes that the results were falsified. Let me briefly mention racism and antisemitism so that it is clear that I do not believe that troubles of this type started only two years ago.

What do these four major events have to do with main topic of my address, i.e., probability and subjectivity?

Epistemology, the philosophical theory of knowledge, is as old as (Western) philosophy. There are different epistemological theories. Let us consider a very simple three-step scheme: data, statistical analysis, and dissemination of information. (I have presented the scheme in the language appropriate for science. The equivalent scheme for the everyday context consists of personal observations, information processing by our brains, and dissemination of information.) Each one of the three stages of the knowledge creation process is subject to random errors—this is how probability enters the picture. My main concern here is the third stage, the dissemination of information. Every person has to decide which information sources are reliable (once again, we encounter probability because a "reliable" information source presents truth with high probability). At this point, happy subjectivity may strike. People may choose information sources that address their emotional needs instead of supplying the unembellished truth. Or one could label this phenomenon the dark subjectivity, a contaminant of rational thinking.

How dangerous is subjectivism? Not very. However, it is not very dangerous for the wrong reasons. Subjective philosophy of probability is a poor cousin of relativism. Subjectivism claims that there is no objective probability. Relativism claims that there is no objective truth. Hence relativism is similar to subjectivism except that the main claim is amplified thousandfold. Relativism is a significant element of postmodern philosophy. It has already percolated to general culture. I note parenthetically that relativism is an excellent example illustrating chickens coming home to roost. Relativism was developed by extreme left-wing philosophers. It has now been successfully implemented by right wing propagandists.

I'll conclude by reiterating my original point in a different way: I love Bayesian statistics because it is objective. It hurts my feelings when people suggest that Bayesian statistics is subjective or partly subjective.



Chris Burdzy delivering his IMS Presidential Address in June 2022



# OBITUARY: Nozer Singpurwalla

## 1939–2022

Nozer Darabsha Singpurwalla, 83, passed away on July 22, 2022 at his home in Washington DC, surrounded by family. He was born in Hubli, India. As a young man, Nozer immigrated to the United States, where he obtained a MS in Engineering from Rutgers University, and a PhD in Engineering from New York University under the direction of John Kao. He met Norah Jackson (who had recently immigrated from England) at a dance at Disneyland, and they married in 1969. Nozer and Norah lived most of their married life in Arlington, Virginia, raising their two children, Rachel and Darius.

Nozer was a faculty member at The George Washington University (GWU) in Washington DC for over 40 years, serving as Distinguished Research Professor both in the Department of Statistics and the Department of Operations Research (later Engineering Management and Systems Engineering), respectively, and Director of GWU's Institute for Reliability and Risk Analysis; he further held a courtesy appointment with the Department of Decision Sciences at GWU. With areas of expertise in diverse fields including reliability theory, risk analysis, Bayesian statistical inference, quality control and statistical aspects of software engineering, he authored/coauthored three books, co-edited six additional references, and published over 200 manuscripts. Nozer was a prolific researcher who obtained prestigious grants and contracts with agencies, including the National Science Foundation (NSF), the National Institute for Standards and Technology (NIST), the Office of Naval Research, the Army Research Office, and the National Aeronautics and Space Administration (NASA), and held various secondary appointments and consultancies

with several laboratories, institutes, and companies nationwide. While at GWU, he further served as a Visiting Professor at Carnegie Mellon University, Stanford University, the University of California at Berkeley, Florida State University, the Santa Fe Institute and the University of Oxford (UK). Nozer obtained additional prestigious appointments with other institutions internationally. During the fall of 1991, he was the first C.C. Garvin Visiting Endowed Professor in the Mathematical Sciences at the Virginia Polytechnic Institute and State University. In 1993, he was awarded a Rockefeller Foundation Grant as a Scholar in Residence at the Bellagio Center, Italy.

Nozer's extensive scholarship and research carried over into his teaching and service activities. He had an impressive track record as a PhD advisor to over 40 students where, in some instances, he oversaw multiple students to graduate in the same year. Nozer's scholarly service to the academy meanwhile included service on a broad array of editorial boards including the *Journal of the American Statistical Association*, *International Statistical Review*, *Operations Research*, *Technometrics*, and *The American Statistician*. He retired from GWU in 2013 becoming an Emeritus Professor of Statistics, and served another eight years as faculty with the City University of Hong Kong. From 2013–2017, he held a joint appointment as Chair Professor in the Department of Systems Engineering and Engineering Management, and the Department of Management Sciences. He then transitioned to other faculty roles in the School of Data Science from 2017–2021; thereafter he was an Honorary Professor in the Department of Management Sciences at City University of Hong Kong.



Nozer Singpurwalla

Nozer was revered internationally for his scholarship, particularly regarding foundational aspects of reliability, risk analysis, and Bayesian Statistics. His efforts earned him various distinctions, as a Fellow of IMS, ASA, and the American Association for the Advancement of Science (AAAS); and as an Elected Member of the International Statistical Institute (ISI). Along with these accolades, he received several additional honors and awards. He was recognized as the 1984 recipient of the U.S. Army's S.S. Wilks Award for Contributions to Statistical Methodologies in Army Research, Development and Testing; the first recipient of GWU's Oscar and Shoshana Trachtenberg Prize for Faculty Scholarship in 1992; and the ASA/NSF/NIST Senior Research Fellow in 1993. In 2011, he was recognized with the Medal of Excellence award from his alma mater, Rutgers University.

Nozer had a way with words and always enjoyed a spirited debate. His colleagues will most remember his sense of humor and his ability to make the complex appear simple. He loved music (Indian, classical, and opera), history and politics, and world travel with his family. He is survived by his wife, Norah; his sister, Khorshed Tantra, and her family; his children, Rachel (Peter) and Darius (Jennifer); and his beloved grandchildren, Veronika and Cyrus.

Written by Kimberly F. Sellers, Refik Soyer,  
and Thomas Mazzuchi

# Anirban's Angle: Remembering Two Colleagues

It is more than four years since two of Anirban DasGupta's close colleagues, Jayanta Ghosh and Herman Rubin, passed away. He knew both well, beyond the level of being "just" colleagues, and he shares a few cherished personal memories that we hope will be of interest to readers:

## Jayanta Ghosh

I first met Professor Ghosh in 1975 when he returned from Pittsburgh and taught my class a methods course out of Mood and Graybill. I quickly realized that his assignments and exam problems were atypical, not bookish problems. He assigned a very small number of problems that forced us to think. He was an extraordinarily generous grader. If I understood an epsilon amount on some problem, he would give me full credit. If I deserved a C, he would give me an A+. At that point, I just knew him from a distance. I started to get to know him personally when he first started to visit Purdue for one semester each year, toward the end of his Directorship at the ISI. We dined together frequently. He was not fussy, at all, about what he would eat. In the early '90s, when I was a more active cook, I often made a Parsi dish called dhansak, a dish combining various lentils, leafy vegetables and potatoes, and some meat, chicken or lamb. Professor Ghosh loved dhansak so much that when Rabi Bhattacharya came to visit him, he introduced me by saying that I make a great Parsi dish. When the 6.9 earthquake struck San Francisco in 1989, and we were watching it together, he was so worried about the safety and wellbeing of Peter Bickel, and, as I recall, he called Peter the next day. I saw that tender and soft side again when he got tearful in front of me when Ashim Mallik passed away.

I remember at least two occasions when he kept me from doing stupid things. In the mid-90s, I had done some



*J.K. Ghosh (1937–2017) pictured in 2010, during a trip to the Lake of Ozarks, MO. Photo: Jyotishka Datta*

work on proposing a new default prior methodology. I was very pleased with myself at the mathematical scope of the proposal. But at the end, the prior had to be found by solving a variational calculus problem that was hard to solve explicitly. Professor Ghosh read that manuscript and advised me, rightly, that it would not be well received. What good is a prior that cannot be computed, he said. I realized that the work was no good. I also recall that around the same time I wanted to give a test for whether a distribution on the line has a finite mean. I consulted Andrew Rukhin and Professor Ghosh about it. Of course, it could not be tested consistently against general alternatives. I remember an evening phone conversation when I pressed him saying that it should be possible to find tests that work well in many cases. He told me that one can always do something on any problem. Again, I dropped that problem, rightly, on his advice. It was not easy to make a friendship with him, but I was lucky that we developed one in the 1990s. He made several contributions to the Purdue statistics department, not the least of which was to teach a PhD level course on Bayesian Nonparametrics out of his book with R.V. Ramamoorthi. He supervised the dissertations of numerous PhD students at

Purdue and was a seasoned leader in writing survey articles. One example is the survey of sequential design and allocation with Arup Bose and Atasi Basu. His office used to be the office of Shanti Gupta and Mary Ellen Bock. Undeservedly, the department Head Hao Zhang gave me his office after he passed away. Now, dear reader, I assure you that my desk is a lot cleaner than his was.

## Herman Rubin

I did not know Herman Rubin personally before I joined Purdue. I knew him only through some his fundamental papers. I was incredibly fortunate that I became professionally close to him within a very short time. Borrowing a line from Jim Berger, I quickly started using Herman as my "intellectual filter." I realized very soon that two questions about Herman are unanswerable: what does Herman Rubin not know, and which problems can Herman Rubin not solve? I found it astonishing that when a complex calculation was needed, he rarely came to the board and wrote. He was an inexplicable master of doing calculations in his head, most of the time correctly, and with unfathomable speed.

Herman was prodigiously unparalleled in many other ways. Mohan Delampady told me that in the '80s, Herman came to work at 6:30 AM. He used to walk around the departmental floor twice a day. He would walk into the offices of a few specific faculty members or those of random graduate students. He started his conversation by saying, "By the way...". It was always about a math problem. He would stay for about 35 minutes, and most times I would learn something new, either a clever technique or a theorem.

Herman had unorthodox views on mundane things. He viewed cooking as a decision theory problem: what is cooking except a set of optimal actions? Herman and

*Continues on page 7*

Jean Rubin had me over for Thanksgiving dinner several times: the turkey was always cooked by Herman. Herman often confided in me. On the paper with Herman Chernoff on estimating an unknown discontinuity point, Herman said to me that he thought most of the work was done by Chernoff. I had concluded that Herman admired Gauss more than Euler. He had tremendous respect, among others, for Paul Halmos, Charles Stein, David Blackwell, Jerzy Neyman, Paul Lévy, Larry Brown and Lucien Le Cam, and some others that are still living. One of them was C.R. Rao, who gave the first Pillai memorial lecture of the Purdue statistics department, about  $\mathcal{L}_p$  inequalities on eigenvalues. I was a witness to the interaction between two masters at that lecture, one giving the seminar and the other sitting in the audience.

Herman was almost incapable of surviving without being engaged in mathematics. When he had his first spinal stenosis surgery, our systems director Doug Crabill went to the hospital and made special wifi arrangements so Herman could answer the accumulated math questions.

Herman was a blunt truth-teller. I was promoted to associate professorship in 1989. I asked the department in 1992, through Jim Berger, that I be put up for promotion to full professorship. I now realize that my proposition was premature. Jim explained to me very patiently after the primary committee meeting why it was risky to do it that year. I recall going to Herman's office some days after that and tell him in some way that I was hoping for the other decision. Herman was doing something on his tiny little computer. He



Herman Rubin (1926–2018)

looked at me and said, “Oh yes. I voted against you.” Shanti Gupta told me the next year, in 1993, that Herman voted for me this time.

If I hadn't come to Purdue, I would have never known Herman so closely: it would have been an inestimable loss.

You can read Anirban's obituaries of Professors J.K. Ghosh and Herman Rubin, which were printed in the December 2017 and June/July 2018 IMS Bulletins, respectively, at <https://imstat.org/2017/11/16/obituary-jayanta-kumar-ghosh-1937-2017/> and <https://imstat.org/2018/05/15/obituary-herman-rubin-1926-2018/>

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# COPSS Presidents' Award: Daniela Witten

Photo: Eric Sampson/ASA



Daniela Witten (right) with Tianxi Cai, at the COPSS Awards session at JSM

## Daniela Witten wins the prestigious 2022 COPSS Presidents' Award

Daniela Witten is a professor of Statistics and Biostatistics at University of Washington, and the Dorothy Gilford Endowed Chair in Mathematical Statistics. She develops statistical machine learning methods for high-dimensional data. Much of her work is motivated by applications in genomics and neuroscience. Daniela is passionate about communicating key ideas from statistical machine learning to a broad audience, and is co-author of the very popular textbook *Introduction to Statistical Learning*. Daniela completed a BS in Math and Biology with Honors and Distinction at Stanford University in 2005, and a PhD in Statistics at Stanford University in 2010.

The Presidents' award citation states that Daniela Witten was selected, *"For bridging the gap between the questions that scientists are asking about their data and the statistical methods that are available to provide insightful answers, especially in the context of biomedical research; for developing flexible and interpretable approaches for modeling large-scale and high-dimensional data; and for the significant elevation of statistical science via successful translation of statistical ideas to a broad audience."*

What follows is Daniela's interview with Amita Manatunga, COPSS Chair, and Maya Sternberg, COPSS Secretary/Treasurer.

### Q1. What was your first reaction to winning the prestigious COPSS President's Award?

Oh gosh. I got an e-mail from Tianxi Cai (chair of the award committee) in late January notifying me of the award, and honestly, my first reaction was that she had sent it to the wrong email address. My second reaction was to double-check that the date was not April 1. My third reaction was to text my husband.

After things had settled a bit, I had the opportunity to reflect on the community that has made not just this award, but my entire career, possible. These include my wonderfully supportive colleagues at University of Washington Departments of Statistics and Biostatistics, my collaborators near and far, the absolutely fantastic PhD students that I've had over the past 12 years, and my family. Also Rob Tibshirani, my PhD advisor—more on that later.

### Q2. Which part of your job do you like the most?

Hands down, my favorite part of the job is working with grad students. I have had the privilege of working with immensely talented PhD students during the past 12 years. Nothing beats a front row seat to the development of a first-year student into an independent researcher. I take immense pride in the accomplishments of all of my

students, and in the ways (both large and small) that I've been able to help them along their academic journeys.

And I love the intellectual freedom that my job provides. I can spend all day (or at least, part of the day... on some days... a couple of days per month when time allows...) learning about things that interest me. What could be better?!

### Q3. What advice would you give to young people who are entering the profession as PhD students and assistant professors?

Getting a PhD, and working towards tenure, is not easy. Actually, it's extremely hard: the academic system never misses an opportunity to remind us of all the things that we don't know, and all of the ways in which our work is not "good enough." So, acknowledge that what you're doing is hard, and that you don't need to be perfect, and that a lot of people are finding it just as hard as you are. (I certainly did at your career stage, and sometimes still do!)

I wrote up my top tips for PhD students in a recent installment of "Written by Witten," my column for the *IMS Bulletin*: <https://imstat.org/2022/04/01/written-by-witten-so-long-and-thanks-for-all-the-tips/>

And I'll sum it all up with a quote from Dory from the movie *Finding Nemo*: "Just keep swimming."



**Q4. Who are your most significant mentors? How did/do they impact your career?**

My most significant mentor has been my PhD advisor, Rob Tibshirani. He has provided unflagging support every step of the way, starting from the beginning of my PhD and continuing to this day. I've learned so much from him, not just about the field of statistics, but also about how to interact with the world as a scientist and a person. He's also set an incredibly high bar in terms of how to be a PhD advisor, which I will spend the rest of my career trying to meet with my own students. (I'll stop now so I don't embarrass him.)

I've also learned that mentorship doesn't need to be a one-stop shop: I've relied on different people for different types of mentorship throughout my career. Gareth James, my co-author on *Introduction to Statistical Learning*, has taught me the value of patience (actually, he's still teaching me this). Ali Shojaie's time as junior faculty at UW overlapped with mine, and he helped me through so many hurdles during that period. Jacob Bien, a long-time friend and collaborator, has reminded me that it's very important for research to be fun. I've learned a lot from some of my senior colleagues at UW, especially former department chairs Bruce Weir and Patrick Heagerty.

I'm fortunate to have been able to surround myself with a supportive community of women. This includes Ya Xu, Sarah Emerson and Layla Parast from my grad student days, and Emily Fox and Amy Willis from my time as faculty. It also includes senior women who have provided ongoing inspiration and a listening ear over the years: Liza Levina, Francesca Dominici, Bhramar Mukherjee, Florentina Bunea, among others.

**Q5: Why were you drawn to statistical machine learning?**

During my first year of grad school at Stanford, I took the two-quarter PhD sequence in statistical machine learning, taught by Trevor Hastie and Jerry Friedman out of the textbook *Elements of Statistical Learning*. I fell for the field—hook, line, and sinker! I was fascinated by the idea that so many of the seemingly mysterious ideas and algorithms in machine learning and artificial intelligence could be demystified—and improved upon!—through a

solid understanding of statistics. And I was intrigued by the possibility of developing and applying these types of methods to solve problems in biology.

**Q6. Anything else you would like to share about our profession?**

I feel so thankful to have found a career that has allowed me to spend my time learning new things and working with talented and kind people. I have felt welcomed into this field ever since I started grad school in 2005.

However, I recognize that my experience has been shaped in large part by my immense privilege. To name just a few aspects of this privilege: I am white, American, and a native English speaker; I did my undergrad at Stanford; and my parents are academics.

I hope that we can commit, as a field, to ensuring that our profession is a welcoming place for all, and especially for members of groups that have been historically marginalized in academia and in the mathematical sciences. And I'd like to express my immense gratitude to the many statisticians who are already working towards this goal every single day.

**Q7: Finally, what are your hobbies/interests beyond statistics?**

Outside of work, I spend most of my time with my husband and three children, who are aged 3, 6, and 8. I love to cook, eat, travel, and spend time with friends. I also try to squeeze in some exercise (I am an enthusiastic runner, and you can learn more about my relationship with my Peloton bike in my first "Written by Witten" column in the *IMS Bulletin* <https://imstat.org/2021/09/30/written-by-witten-reflections-on-19-months-of-work-from-home/>).

## Nominations for 2023 COPSS Awards

The Committee of Presidents of Statistical Societies will select winners for these awards in 2023:

- Presidents' Award
- COPSS Distinguished Achievement Award and Lectureship
- Florence N. David Award and Lectureship
- George W. Snedecor Award

The deadline for nominations is December 15. Details forthcoming at <https://community.amstat.org/copss/awards/awards>

# An Invitation to Research

We introduce a new section in which IMS members are invited to propose new research ideas or directions. These do not need to be formally/provably absolutely new, but 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 critical comments and/or suggestions, and to write in and share your own ideas.

Starting the series is **Alexander Y. Mitrophanov**. Alex is a Senior Statistician at the Frederick National Laboratory for Cancer Research, National Institutes of Health, USA. His email is [alex.mitrophanov@nih.gov](mailto:alex.mitrophanov@nih.gov).

## Quantitative Perturbation Theory for Stochastic Processes

Perturbation theory for Markov chains, centered largely on the analysis of perturbation bounds and asymptotic expansions, is a rapidly developing research direction in probability theory and its applications [references 1-3]. While the conceptual foundation for this line of research was laid in the 1960s, it is only in the last two decades that it has attained real visibility and recognition in the broader community of quantitative researchers. Many of the cutting-edge theoretical developments in this area are motivated by the need to develop and assess approximation-based approaches to Markov chain Monte Carlo (MCMC) computation, an essential tool in Bayesian statistics. Beyond computational statistics, Markov-chain perturbation results and their generalizations are applied in fields as diverse as machine learning, queuing theory, stochastic chemical kinetics, genetics, quantum physics, and climate science.

When I started doing research in that area some 20 years ago (e.g., [4]), I could not imagine this diversity of possible applications, and my knowledge of MCMC was at the level of a self-taught graduate student. I knew something about stochastic chemical kinetics, but most of my inspiration came from some general ideas about the development of mathematics. Having been exposed to a wide variety of mathematical

subjects (and being preoccupied with choosing a topic for my PhD thesis), I formulated—just for my own self-guidance—a completely non-rigorous, naïve, yet fruitful concept: “Every type of mathematical object needs a quantitative perturbation theory. If that theory does not exist, it should be developed. If it does exist, it should be improved.” I was particularly fond of the notion that a perturbation bound could allow one to quantify the size of the perturbation in some equation's solution given the magnitude of perturbations in the equation's parameters, and such bounds might even tell us something valuable about the properties of the equation itself. I found powerful examples of the inequality-based approach in numerical linear algebra—the widely used matrix condition numbers and all that. And in fact, perturbation bounds lie at the very foundation of modern mathematics: the ubiquitous Lipschitz and Hölder continuity conditions can in principle be viewed as sort of uniform perturbation bounds for functions studied in real analysis and approximation theory.

Going back to the world of probabilities, we note that many of its results exist in the form of limit theorems. Such theorems can be given a precise quantitative meaning if we use perturbation theory to replace the limit statement (or an



*Alexander Y. Mitrophanov invites you to respond to this research idea... or to send in your own ideas!*

asymptotic rate-of-convergence formula) with a tight—and, preferably, explicitly computable—nearness bound. This use of inequality-based perturbation theory complements its more obvious use to facilitate uncertainty quantification (which, taken generally, is a vast research field of its own that has exploded in the recent decade).

Going beyond Markov chains, a natural next step is to extend the Markov-chain perturbation results to other classes of stochastic processes. One remarkable finding

is the quantitative connection between the robustness of a Markov chain under perturbations and its rate of convergence to steady state. (A brief survey of related stability results, originally targeted at mathematical physicists, is available online: [http://alexmitr.com/talk\\_DDE2018\\_Mitrophanov\\_FIN\\_post\\_sm.pdf](http://alexmitr.com/talk_DDE2018_Mitrophanov_FIN_post_sm.pdf))

It would be interesting to find out to what extent this, or similar, type of connection holds for other classes of ergodic stochastic processes. Naturally, for different classes of non-Markov processes, we are also interested in perturbation results that are unique to their specific class.

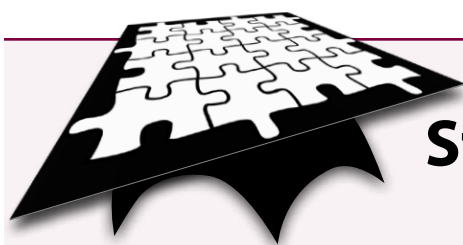
At a “more quantitative” level, the race is always on to improve the tightness of perturbation bounds (even in the now-classic domain of Markov chains, but with a particular emphasis on infinite state spaces). Furthermore, for a complete localization of

perturbed solutions, we need both upper and lower bounds on the perturbation magnitude. However, all the Markov-chain perturbation bounds I know are in fact upper bounds, and obtaining informative lower bounds might require completely new ideas and techniques. Finally, we can expect that new and exciting applications will continue to drive theoretical developments in perturbation theory and the related fields of uncertainty quantification and sensitivity analysis. At the same time, it might also happen that, if we take care of the theory, applications will just take care of themselves.

## References

1. Negrea J., Rosenthal J. S. (2021) Approximations of geometrically ergodic reversible Markov chains. *Adv Appl Probab* **53**: 981-1022.
2. Levi E., Craiu R. V. (2022) Finding our way in the dark: approximate MCMC for approximate Bayesian methods. *Bayesian Analysis* **17**: 193-221.
3. Medina-Aguayo F., Rudolf D., Schweizer N. (2020) Perturbation bounds for Monte Carlo within Metropolis via restricted approximations. *Stoch Proc Appl* **130**: 2200-2227.
4. Mitrophanov A. Y. (2003) Stability and exponential convergence of continuous-time Markov chains. *J Appl Probab* **40**: 970-979.

**Do you have constructively critical comments or suggestions about this research area? Respond to Alex directly ([alex.mitrophanov@nih.gov](mailto:alex.mitrophanov@nih.gov)) or write via the Bulletin ([bulletin@imstat.org](mailto:bulletin@imstat.org)). If you've been wondering, "Is anyone else interested in finding out...?" this is your chance to ask! Consider this YOUR Invitation to Research.**



## Student Puzzle Corner 40 (again)

**There's still time to send in your solution! Here's a reminder of Student Puzzle Editor Anirban DasGupta's latest puzzle:**

Your friend is thinking of a two-digit positive integer  $N$  consisting of two distinct nonzero digits. The friend won't tell you what  $N$  is, but will give truthful answers to two yes/no questions. You ask your friend, "Is it a prime number?" Then, you ask, "If you reverse the digits of your number, is it still a prime number?"

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

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

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

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

**Deadline: September 15, 2022**

# Southeastern Probability Conference

## SEPC expands its reach

Since Rick Durrett moved to Duke, in the summer of 2010, there has been a one-and-a-half day meeting there called the Southeastern Probability Conference, usually held the Monday and Tuesday after graduation and before the start of summer school. The beginning of 2020 brought good news and bad news for the conference. The good news was that we received a grant from NSF to support the meeting for four years and provide support for graduate students and postdocs. You can guess the bad news... The COVID epidemic shut down in-person meetings for two years, although there was a Virtual Conference held May 17–18, 2021, in honor of Elizabeth Meckes. Links to this conference and previous SEPCs can be found at <https://services.math.duke.edu/~rtd/>

From May 31–June 1, 2022, there was again an in-person SEPC meeting held at Duke University. The seven invited speakers were **Erik Bates** (Wisconsin), **Juraj Foldes** (Virginia), **Konstantin Matetski** (Columbia), **Evita Nestoridi** (Princeton), **Mariana Olvera-Cravioto** (UNC), **Shankar Bhamidi** (UNC), and **Nicholas Cook** (Duke). The unusually large number of local speakers was due to the fact that Scott McKinley from Tulane and Marianna Russkikh from MIT became infected with the influenza virus and could not attend.

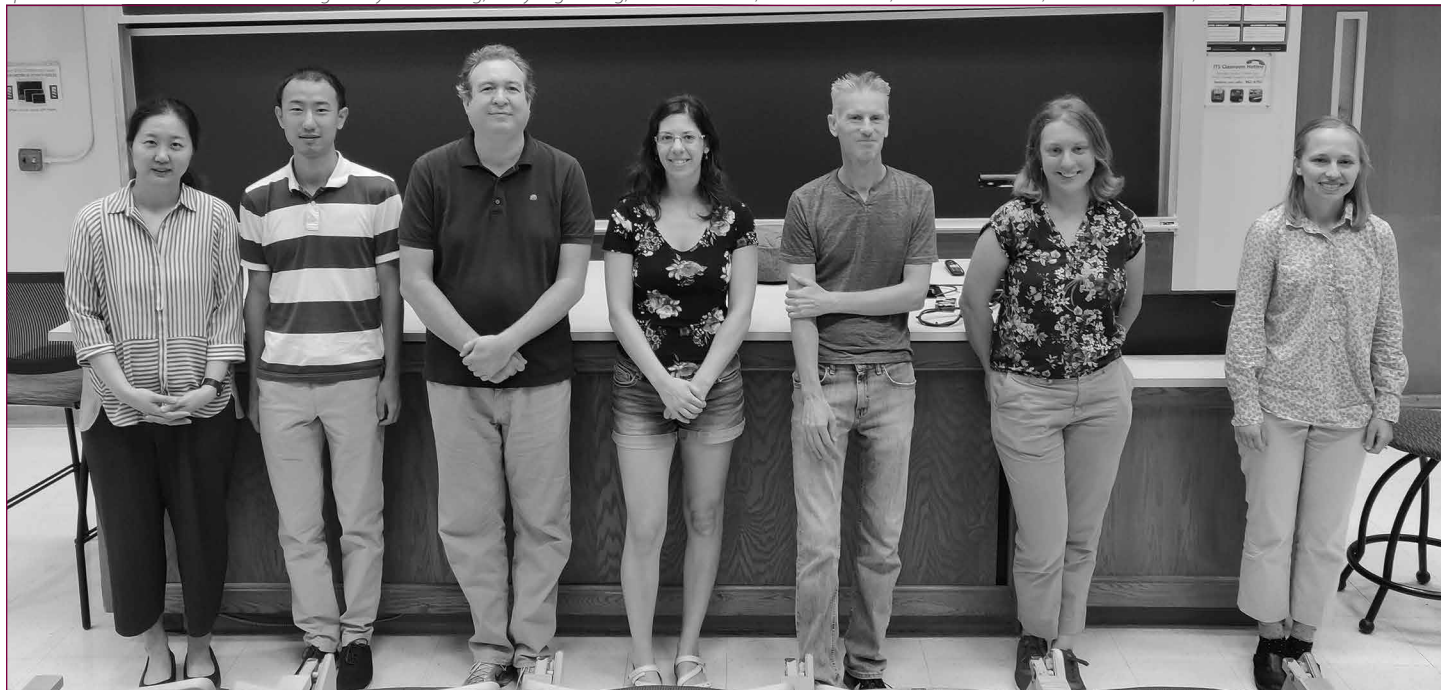
From August 8–9, 2022, a second SEPC meeting was held, organized by Shankar Bhamidi and Amarjit Budhiraja. The seven invited speakers [pictured below] were **Julia Gaudio** (Northwestern, IE and MS), **Jiaoyang Huang** (NYU), **Hye-Won Kang** (U of

Maryland, Baltimore County), **Annie Katsevich** (NYU), **Nicholas Lanchier** (Arizona State), **Elizaveta Rebrova** (Princeton ORFE), and **Sebastien Roch** (Wisconsin). Displaying the breadth and depth of research in modern probability, these seven speakers gave excellent talks on a wide range of topics including high-dimensional probability and projective iterative methods in machine learning, probabilistic models in evolutionary genomics and multiscale phenomenon in biochemical networks, long term behavior of consensus or discordance in interacting particle systems, learning latent network structure from multiple correlated observations, local equilibrium states in models for crystal surface dynamics, and extremal statistics of eigenvalues of adjacency matrices of random graphs.

## Looking ahead: SEPC in 2023

There will again be two meetings held in 2023. The first will be at Duke in the traditional time slot, May 15–16, and a second one will be held August 14–15 at the University of Virginia in Charlottesville and organized by Juraj Foldes, Christian Gromoll, and Tai Melcher. **Graduate students and postdocs will have a chance to apply for \$500 grants to partially support the cost of their attendance.** We hope that moving the venue will spread out the work of running the conference and allow more people to participate in the meeting. Watch the webpage listed above and the *IMS Bulletin* for more details.

Speakers at the second 2022 SEPC in August: Hye-won Kang, Jiaoyang Huang, Sebastien Roch, Annie Katsevich, Nicholas Lanchier, Elizaveta Rebrova, Julia Gaudio





# ENAR 2023: IMS Program Highlights

**Xuan Bi** from the University of Minnesota is the IMS Program Chair for next year's ENAR meeting. He writes: Each year, the International Biometric Society (IBS), together with IMS and Sections of ASA, holds the ENAR (the Eastern North American Region) meeting in Spring. The ENAR 2023 Spring Meeting will be held at the JW Marriott Nashville from March 19–22. The meeting brings together researchers, practitioners from academia, industry, and government to advance biological and life science through the development of quantitative theories and the application, development, and dissemination of effective mathematical and statistical techniques. For the purpose of supporting the meeting as well as the development of the biostatistics field, IMS will provide **travel awards for graduate students and new researchers** in order to promote their research and practice activities [see page 16 for how to apply].

IMS will have a strong program at ENAR 2023. The IMS Program Chair, Xuan Bi from the University of Minnesota, has organized an IMS Medallion Lecture (see below), to be presented by Professor **Hongyu Zhao** from Yale School of Public Health, to discuss the statistical issues in genome-wide association studies (GWAS). There will be complementary sessions on machine learning methods in biomedical data science, causal inference, brain connectivity and brain imaging genomics, statistical genetics and genomics, novel clinical trial design, as well as emerging topics including distributed health data analysis, data privacy, fairness, individualization, and mobilization. A few interesting talks are highlighted below.

We are delighted that next year's ENAR will again host an IMS Medallion Lecture—the first at ENAR for several years. Professor Zhao will first introduce GWAS and statistical models that are commonly used to characterize how genetic factors contribute to complex traits. He will

then discuss the robustness of these models and their extensions that can help identify tissues and cell types relevant for a specific trait by integrating diverse -omics data. As 2023 will be the 75th anniversary of IBS and ENAR, Professor Zhao will reflect on the history of the organization, and the history of the field of biostatistics.

Another highlight is the development and advancement of statistical and biostatistical techniques in nascent, yet burgeoning, applications. For example, rich longitudinal data tracking people's physical activities and health status enable us to deliver non-invasive interventions in real time. However, understanding and analysis of such mobile health data is still quite limited. Professor **Annie Qu** from the University of California, Irvine, proposes a latent dynamic model (LDM) for multi-resolution data integration in mobile health. This method utilizes non-parametric latent dynamic factors to capture the underlying trend in longitudinal data with mixed resolution and irregular time intervals. Importantly, the non-parametric latent factors is capable of recovering the large portion of missing data that occurs frequently in mobile health studies. Professor Qu's work is motivated by Garmin watch and Oura ring data, monitoring stress in caregivers for dementia patients.

Meanwhile, knockoff-based methods are becoming increasingly popular due to their enhanced power for locus discovery and their ability to prioritize putative causal variants in a genome-wide analysis. However, because of the substantial computational cost for generating knock-offs, existing knock-off approaches cannot analyze biobank-scale datasets. Professor **Iuliana Ionita-Laza** from the Department of Biostatistics at Columbia Mailman School of Public Health will discuss a scalable knockoff-based method for population-based designs, and related extensions to family-based designs.



Medallion Lecturer Hongyu Zhao



Annie Qu



Iuliana Ionita-Laza

# Watch IMS Special Lectures on YouTube

Each year the IMS selects a range of distinguished researchers to deliver a special (named or medallion) lecture and receive the associated award, at one of the IMS sponsored or co-sponsored meetings. Where possible, these lectures are recorded and made freely available on our IMS YouTube channel. This year's special lectures have been uploaded. You can watch them at <https://www.youtube.com/c/instituteofmathematicalstatistics/videos>



*One of this year's IMS Special Lectures, the Grace Wahba Lecture, was given by Michael Jordan, pictured here holding his medal, with Douglas Nychka*

## THIS YEAR'S SPECIAL LECTURES

### (in upload order):

- IMS Medallion Lecture: "Deformed Polynuclear Growth in  $(1+1)$  Dimensions" **Alexei Borodin**
- IMS Medallion Lecture: "Non-asymptotic Random Matrix Theory" **Ramon van Handel**
- IMS Brown Session: "Multiway Clustering in Tensor Block Model: Statistical Optimality and Computational Limit" **Rungang Han**
- IMS Brown Session: "Assumption-Lean Analysis of Cluster Randomized Trials in Infectious Diseases for Intent-to-Treat Effects and Network Effects" **Chan Park**
- IMS Brown Session: "Statistical Inference for High-Dimensional Generalized Linear Models with Binary Outcomes" **Rong Ma**
- IMS/BS Schramm Lecture: "Monotonicity for Continuous-Time Random Walks" **Russell Lyons**
- IMS Wahba Lecture: "On the Blending of Statistical Machine Learning and Microeconomics" **Michael Jordan**
- IMS Rietz Lecture: "Statistical Tools for Random Objects in Metric Spaces" **Hans-Georg Müller**
- IMS Neyman Lecture: "Genes, Brain, and Us" **Heping Zhang**
- IMS Wald Lecture parts I & II: "Universality and Crossover in  $1+1$  Dimensions" **Martin Hairer**
- IMS Medallion Lecture IV: "Privacy, Probability, and Synthetic Data" **Roman Vershynin**
- IMS Medallion Lecture III: "Multiplicative Coalescent Related Processes" **Vlada Limic**
- IMS Medallion Lecture II: "Distribution-free Prediction: Exchangeability and Beyond" **Rina Foygel Barber**
- IMS Medallion Lecture I: "A Doob  $h$ -process and its Applications to Singular Integrals on  $\mathbb{Z}^d$ " **Rodrigo Bañuelos**

## VIDEOS FROM PREVIOUS YEARS:

- BS/IMS Schramm Lecture: "Balloons in Space(s)" **Omer Angel**
- IMS Wald Lectures, I: "Random Walks and Fractal Graphs"; II: "Low Dimensional Random Fractals"; and III: "Higher Dimensional Spaces" **Martin Barlow**
- IMS Medallion Lecture: "Gambler's Ruin Problems" **Laurent Saloff-Coste**
- IMS Medallion Lecture: "Random Determinants and the Elastic Manifold" **Gérard Ben Arous**
- IMS Medallion Lecture: "Simplicity and complexity of belief-propagation" **Elchanan Mossel**
- BS/IMS Doob Lecture: "Parking on Cayley trees and Frozen Erdős-Rényi" **Nicolas Curien**
- IMS Brown Award: "Toward instance-optimal reinforcement learning" **Ashwin Pananjady**
- IMS Brown Award: "Efficient manifold approximation with Spherelets" **Didong Li**
- IMS Brown Award: "Bayesian pyramids: Identifying interpretable discrete latent structures from discrete data" **Yuqi Gu**
- IMS Blackwell Lecture: "Estimating the mean of a random vector" **Gabor Lugosi**
- IMS Medallion Lecture: "Selective inference for trees" **Daniela Witten**
- IMS Medallion Lecture: "High-dimensional interpolators: From linear regression to neural tangent models" **Andrea Montanari**
- IMS Wald Lectures I & II: "Modeling and Estimating Large Sparse Networks I" & "Modeling and Estimating Large Sparse Networks II" **Jennifer Chayes**
- IMS President Address: "Proactive and All-Encompassing Statistics" **Regina Liu**
- IMS Medallion Lecture: "DNA Copy Number Profiling from Bulk Tissues to Single Cells" **Nancy Zhang**
- IMS Lawrence D. Brown PhD Student Award Session 2021: "First-Order Newton-Type Estimator for Distributed Estimation and Inference" **Yichen Zhang**; "Minimax Optimality of Permutation Tests" **Ilmun Kim**; and "Inference in Interpretable Latent Factor Regression Models" **Xin Bing**
- IMS Medallion Lecture: "What Kinds of Functions Do Neural Networks Learn?" **Robert Nowak**
- IMS Medallion Lecture: "Empirical Optimal Transport: Inference, Algorithms, Applications" **Axel Munk**
- IMS Le Cam Lecture: "Understanding Spectral Embedding" **Jianqing Fan**
- IMS Medallion Lecture: "Statistical Optimal Transport" **Philippe Rigollet**

## MORE VIDEOS:

Videos from the 2022 Seminar on Stochastic Processes (March 2022, Lehigh University, PA, USA) are also available online. This includes **Gregory Lawler's** tutorial lectures, and the Plenary lectures by **Alexei Borodin**, **Jennifer Chayes**, **Tadahisa Funaki**, **Ramon van Handel** [see next page], **Sarah Penington**, and **Makiko Sasada**. See <https://wordpress.lehigh.edu/ssp2022/videos-photos/>

# IMS Medallion Lecture: correction

## Ramon van Handel

Ramon van Handel is an associate professor, and a member of the executive committee of the Program in Applied and Computational Mathematics (PACM), at Princeton University. He received his PhD in 2007 from Caltech. His honors include the NSF CAREER award, the Presidential Early Career Award for Scientists and Engineers (PECASE), the Erlang Prize, the Princeton University Graduate Mentoring Award, and several teaching awards. He has served on the editorial boards of the *Annals of Applied Probability* and *Probability Theory and Related Fields*, and is the probability editor for the IMS Textbooks and Monographs series. This Medallion lecture was given at the Seminar on Stochastic Processes in March 2022.

*Due to a production error, only the first paragraph of the summary appeared in the previous issue; sorry for any confusion. Here it is in full:*



### Nonasymptotic random matrix theory

Classical random matrix theory is largely concerned with the spectral properties of special models of random matrices, such as matrices with i.i.d. entries or invariant ensembles, whose asymptotic behavior as the dimension increases has been understood in striking detail. On the other hand, suppose we are given a random matrix with an essentially arbitrary pattern of entry means and variances, dependencies, and distributions. What can we say about its spectrum? Beside lacking most of the special features that facilitate the analysis of classical random matrix models, such questions are inherently nonasymptotic in nature: when we are asked to study the spectral properties of a given, arbitrarily structured random matrix, there is no associated sequence of models of increasing dimension that enables us to formulate asymptotic questions.

It may appear hopeless that anything useful can be proved at this level of generality. Nonetheless, a set of tools known as “matrix concentration inequalities” makes it possible at least to crudely estimate the range of the spectrum of very general random matrices up to logarithmic factors in the dimension. Due to their versatility and ease of use, these inequalities have had a considerable impact on a wide variety of applications in pure mathematics, applied mathematics, and statistics. On the other hand, it is well known

that these inequalities fail to capture the correct order of magnitude of the spectrum even in the simplest examples of random matrices. Until very recently, results of this kind were essentially the only available tool for the study of generally structured random matrices.

In my lecture, I describe a new approach to such questions (developed in joint work with Bandeira, Boedihardjo, and Brailovskaya) that has opened the door to a drastically improved nonasymptotic understanding of the spectral properties of generally structured random matrices. In this new theory, we introduce certain deterministic, infinite-dimensional operators, constructed using methods of free probability, that may be viewed as the “Platonic ideals” associated random matrices. Our theory shows, in a precise nonasymptotic sense, that the spectrum of an arbitrarily structured random matrix is accurately captured by that of the associated Platonic ideal under remarkably mild conditions. The resulting sharp inequalities are easily applicable in concrete situations, and capture the correct behavior of many examples for which no other approach is known.

**Watch this lecture online on the IMS YouTube channel** [see previous page]  
<https://www.youtube.com/watch?v=0jwINQPeOS>

## NOMINATE A FUTURE IMS SPECIAL LECTURER

Submit your nomination: <https://www.imstat.org/ims-special-lectures/nominations/>

The IMS Committee on Special Lectures is accepting nominations until **October 1, 2022**, for:

- the 2024 Le Cam Award & Lecture
- the 2024 Wahba Award & Lecture
- the 2025 Medallion Award & Lecturers (eight awards)

Information on all IMS special lectures is available at <https://www.imstat.org/ims-special-lectures/>

# Nominate for IMS Awards

## Early-Career Awards

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



Peter Hall

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

Richard Tweedie (1947–2001) played a significant role throughout his career as a mentor. The **Tweedie New Researcher Award**, created in his memory, provides funds for travel to present the **Tweedie New Researcher Invited Lecture** at the IMS New Researchers Conference. Nominations should be received by **December 1, 2022**: see the instructions at <https://imstat.org/ims-awards/tweedie-new-researcher-award/>



Richard Tweedie

## Harry C. Carver Award

Nominations are invited for the **Carver Medal**, created by the IMS in honor of Harry C. Carver, for exceptional service specifically to the IMS. Deadline **February 1, 2023**: <https://www.imstat.org/ims-awards/harry-c-carver-medal/>.



IMS Founder Harry Carver

## IMS Fellowship

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

# Apply for an IMS Travel Award for 2023

## Travel Awards for Grad Students and New Researchers

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

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

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

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



Four of the IMS Travel Award winners were able to use their awards to travel to the IMS Annual Meeting in London in June. Pictured left–right are **Raaz Dwivedi**, Harvard University & MIT; **Michele Caprio**, Duke University; **Tim Tsz-Kit Lau**, Northwestern University; and **Felipe A. Campos Vergara**, University of California, San Diego. Maybe next year this could be **you**?



# Eurostat Nowcasting Competition

## Assemble your team!

We are pleased to announce that Eurostat is organising the European Statistics Awards Programme, with competitions in the fields of nowcasting and web intelligence. By “nowcasting” we mean the forecasting of statistical indicators with extremely tight timeliness – typically before the reference period is over. Nowcasting methods are seen as possible cost efficient, robust and generic approaches providing solutions to cover unmet needs. The main goal of the competition is to discover promising methodologies and data sources that could be used to improve the production of European statistics.

Within the awards programme, which will run until the end of 2025, we are planning three yearly rounds of competitions on nowcasting. The European Statistics Awards for Web Intelligence will be launched later this autumn.

## Launch of the first European Statistics Awards for Nowcasting

Better timeliness is a recurring demand by policymakers and other users of European statistics. Improving timeliness requires continuous efforts involving a broad range of stakeholders and is a key driver for innovation in European statistics. New approaches based on advanced modelling (possibly using alternative, almost real-time, information) have an important potential to give us accurate estimates of key indicators much faster than before.

Therefore, we are now launching the first round of European Statistics Awards for Nowcasting.

## TIMELINE

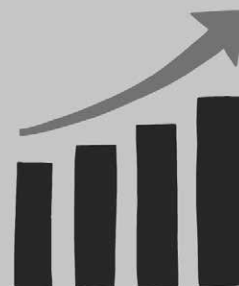
The competition will begin on 1 September 2022 and will run for eight months, until 30 April 2023.

## TEAMS

The contest is open to teams of up to five persons from various backgrounds and disciplines with skills in time series analysis, forecasting or nowcasting. The competition



## EUROPEAN STATISTICS AWARDS NOWCASTING



is an excellent opportunity to apply your knowledge of econometric time series modelling in a real-life situation and to win up to EUR 8 000 per nowcasted time series. Your team could thus win up to EUR 24 000 in this round in case you rank first for all three time series.

## TOPICS

As part of the competition, we expect the submission of at least six point estimates of the monthly time series over a period of eight months for at least five countries. Submitting estimates for all eight months (and for more than five countries) will increase your likelihood of ranking first for the accuracy award. To be in the running for the reproducibility award, your team should also submit detailed methodological descriptions (including code).

In the first competition round, the teams will have the opportunity to submit nowcasts for one or more of the following three European statistics time series:

### Topic 1 Tourism number of nights spent at tourist accommodation establishments

(Eurobase code: TOUR\_OCC\_NIM, UNIT:NR, NACE R2: I551-I553, INDIC TO: B006)

### Topic 2 Production volume in industry - PVI

(Eurobase code: STS\_INPR\_M, INDIC\_BT: PROD, NACE\_R2: B-D, S\_ADJ:SCA, UNIT:I15)

### Topic 3 Producer prices in industry (domestic market) - PPI

(Eurobase codes: STS\_INPPD\_M, INDIC\_BT: PRIN, NACE\_R2: B-E36, S\_ADJ: NSA, UNIT: I15)

Find out more: <https://statistics-awards.eu/>

# Ethel Newbold Prize: Nominations invited

## Call for Nominations: 2023 Ethel Newbold Prize

The Ethel Newbold Prize for excellence in statistics is awarded every two years. The name of the prize recognizes the historically important role of women in statistics. The prize itself is for excellence in statistics without reference to the gender of the recipient. The Ethel Newbold Prize is generously supported by Wiley.

The Prize will be awarded to an outstanding statistical scientist in early or mid-career for a body of work that represents excellence in research in mathematical statistics, and/or excellence in research that links developments in a substantive field to new advances in statistics. In any year in which the award is due, the prize will not be awarded unless the set of all nominations includes candidates from both genders. The award consists of the prize amount of 2500€ together with an award certificate. The awardee will be invited to present a talk at the following Bernoulli World Congress, Bernoulli-sponsored major conference, or ISI World Statistics Congress.

The Bernoulli Society's Newbold Prize Committee invites nominations for the fifth Ethel Newbold Prize. Each nomination should include a letter outlining the case in support of the nominee, along with a curriculum vitae. Nominations as well as any inquiries about the award should be sent to Gesine Reinert at [reinert@stats.ox.ac.uk](mailto:reinert@stats.ox.ac.uk). The deadline for nominations is **30 November 2022**. The prize winner will be selected in Spring 2023.

The Ethel Newbold Prize was founded in 2014. Previous winners, with the year of their award, are:

2015: **Judith Rousseau**  
 2017: **Richard Nickl**  
 2019: **Mathias Drton**  
 2021: **Marloes Maathuis**

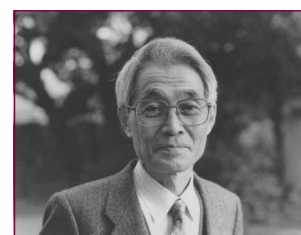
# Fourth Akaike Memorial Lecture Award

In May 2016, the Institute of Statistical Mathematics (ISM) and the Japan Statistics Society (JSS) jointly launched the Akaike Memorial Lecture Award program. The purpose of this award is to commemorate the achievements of the late Dr. Hirotugu Akaike, who established a novel paradigm to evaluate the predictive accuracy of statistical modeling. He proposed a metric for model selection, the Akaike Information Criterion (AIC), based on an approach completely different from the statistical theories common at the time. Dr. Akaike's ideas have influenced a wide range of theoretical and applied research areas.

The Fourth Award goes to Professor **Aapo Hyvärinen** of the University of Helsinki, Finland. Professor Hyvärinen has contributed numerous outstanding achievements in machine learning and computational neuroscience, including the development of well recognized statistical techniques in signal processing and image analysis. Among his accomplishments, his contributions to the development of independent component analysis (ICA) are well recognized and valued in the statistics and machine learning communities. His academic interests and research style are closely related to those of the late Dr. Akaike. Professor Hyvärinen is a renowned international leader in pure and applied statistical science and deserves the Akaike Memorial Lecture Award.

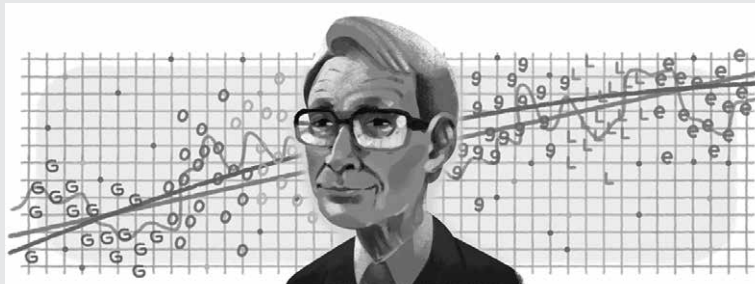
Because of the COVID-19 pandemic and related overseas travel restrictions, Professor Hyvärinen will present his lecture online at the plenary session of the Japanese Joint Statistical Meeting (JJSJ) 2022 which will be held on September 5 at Seikei University, Tokyo.

For more about the recipient and the award, please see [https://www.ism.ac.jp/ura/press/ISM2022-05\\_e.html](https://www.ism.ac.jp/ura/press/ISM2022-05_e.html).



Hirotugu Akaike, 1927–2009

IMS Fellow Hirotugu Akaike passed away in 2009. On November 5, 2017, which would have been his 90th birthday, there was a Google Doodle in his honor, with an image of Dr. Akaike "against a Google-inspired approximation of functions, parameters, and their respective curves." You can read a little about his work at <https://www.google.com/doodles/hirotugu-akaikes-90th-birthday>



# Recent papers

## *Annals of Probability*: <https://projecteuclid.org/aop>

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

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## *Annals of Applied Probability*: <https://projecteuclid.org/aoap>

The *Annals of Applied Probability* aims to publish research of the highest quality reflecting the varied facets of contemporary Applied Probability. Primary emphasis is placed on importance and originality. Co-editors are Kavita Ramanan and Qi-Man Shao.

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ALEA, the Latin-American Journal of Probability and Mathematical Statistics, publishes research articles in probability theory, stochastic processes, mathematical statistics, and their applications. Access papers at <http://alea.impa.br/english/>

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# IMS meetings around the world

## Joint Statistical Meetings

### 2023 Joint Statistical Meetings

August 5–10, 2023 in Toronto

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

The IMS Program Chair is Huixia Judy Wang, George Washington University. The portal for submitting invited session proposals is open through Thursday, September 8, 2022. (In odd-numbered years when the JSM is also the IMS Annual Meeting, the IMS requires half of the invited session allocation to be competitive.)



### JSM dates for 2024–2026

**JSM 2024**

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

**IMS Annual Meeting**

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

**JSM 2026**

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

### Seminar on Stochastic Processes

**March 8–11, 2023 at University of Arizona, Tucson**

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

Seminar on Stochastic Processes is a series of annual conferences devoted to stochastic analysis, Markov processes, and other topics of current interest in probability theory. Tutorial lectures by Gérard Ben Arous on March 8. Invited speakers: Patricia Alonso Ruiz, François Delarue (Kai Lai Chung Lecture), Jian Ding (Medallion Lecture), Patrícia Gonçalves, Philippe Sosoe. Registration and financial support application forms are coming soon.

### Southeastern Probability Conference (two in 2023)

**May 15–16, 2023 at Duke University, USA, and**  
**August 14–15, 2023 at University of Virginia in Charlottesville, USA**

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

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

### YoungStatS Webinar: Regularization by Noise for Stochastic Differential

**and Stochastic Partial Differential Equations**

**September 21, 2022. Online, via Zoom**

[w https://youngstats.github.io/post/2022/06/03/regularization-by-noise-for-stochastic-differential-and-stochastic-partial-differential-equations/](https://youngstats.github.io/post/2022/06/03/regularization-by-noise-for-stochastic-differential-and-stochastic-partial-differential-equations/)

The regularizing effects of noisy perturbations of differential equations is a central subject of stochastic analysis. Recent breakthroughs initiated a new wave of interest, particularly concerning non-Markovian, infinite dimensional, and rough-stochastic / Young-stochastic hybrid systems.



### 2023 ENAR/IMS Spring Meeting

**March 22–25, 2023**

**Nashville, TN, USA**

[w https://enar.org/meetings/future.cfm](https://enar.org/meetings/future.cfm)

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

### 2024 ENAR/IMS

**Spring Meeting**

**March 10–13, 2024**

**Baltimore, MD, USA**

[w https://enar.org/meetings/future.cfm](https://enar.org/meetings/future.cfm)

## At a glance:

*forthcoming*  
*IMS Annual*  
*Meeting and*  
*JSM dates*

## 2023

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

## 2024

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

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

## 2025

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

## 2026

**IMS Annual Meeting:** TBD

**JSM:** Boston, MA, August 1–6, 2026

### 43rd Conference on

**Stochastic Processes and their Applications**  
**July 24–28, 2023 in Lisbon, Portugal**

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

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

# More IMS meetings

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

UPDATED

December 13–16, 2022 in Florence, Italy

[w https://sites.google.com/view/icsds2022](https://sites.google.com/view/icsds2022)

The inaugural 2022 IMS International Conference on Statistics and Data Science (ICSDS) will provide **10 travel awards, \$800 USD each, to PhD students who participate in invited or contributed program.** Applicants for the awards must be members of IMS, and joining at the time of application is allowed. **The submission site for applications for travel awards closes Sept. 15. Submissions are also open for contributed talks and posters until then.** The first IMS International Conference on Statistics and Data Science (ICSDS) is to be held in Florence, Italy, from December 13–16, 2022. The objective of ICSDS is to bring together researchers in statistics and data science from academia, industry and government in a stimulating setting to exchange ideas on the developments in modern statistics, machine learning, and broadly defined theory, methods and applications in data science. The conference will consist of plenary sessions, and about 50 invited, contributed and poster sessions. **Young researchers are particularly encouraged to participate,** with a portion of the invited sessions designated for them. Plenary speakers: Emmanuel Candès, Guido Imbens, Susan Murphy, Sylvia Richardson.

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

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

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

## BNP13: the 13th Conference on Bayesian Nonparametrics

October 24–28, 2022 in Puerto Varas, Chile

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

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

## IMS annual meeting

**Bernoulli–IMS 11th World Congress in Probability and Statistics**

**August 12–16, 2024**

**Ruhr-University Bochum, Germany**

[w TBC](#)

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

## IMS–APRM in Melbourne, Australia

**POSTPONED TO JANUARY 2024**

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



## One World ABC Seminar: Ongoing and online

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

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

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

[w https://www.owprobability.org/one-world-probability-seminar/](https://www.owprobability.org/one-world-probability-seminar/)

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

# Employment Opportunities

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

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### EPFL

Full Professor of Statistics at the Ecole Polytechnique Federale de Lausanne

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

## Switzerland: Zurich

### ETH Zurich

Professor of Statistics

<https://jobs.imstat.org/job//64651889>

## Taiwan: Taipei

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

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

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

## Taiwan: Taipei City

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

Tenure-Track Faculty Positions

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

## United Kingdom: Glasgow

### University of Glasgow

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## United Kingdom: Glasgow

### University of Glasgow

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<https://jobs.imstat.org/job//64764979>

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### Imperial College London

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Assistant Professor - Statistics, Data Science - Department of Statistics

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## United States: Berkeley, CA

### University of California, Berkeley Department of Statistics

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

Professor of Clinical Data Sciences and Operations (Open Rank)

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

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

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## United States: Fort Collins, CO

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### University of Iowa

Assistant Professor of Statistics

<https://jobs.imstat.org/job//64580020>

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

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Statistician

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Assistant Professor in Statistics

<https://jobs.imstat.org/job//65308973>**Institute of Statistical Science, Academia Sinica, Taiwan****Tenure-Track Faculty Positions**

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


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

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

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



# International Calendar of Statistical Events



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


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



## Online and Ongoing


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

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

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

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

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



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

## September 2022

September 7–10: UC Santa Cruz, CA, USA. **O'Bayes 2022**  
w <https://obayes.soe.ucsc.edu/>

September 12–15: Aberdeen, UK. **RSS International Conference**  
w <https://rss.org.uk/training-events/conference2022/>

September 20–22: Rockville, MD, USA. **2022 ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop** w <https://ww2.amstat.org/meetings/biop/2022/>

  September 21: Online. **Regularization by Noise for Stochastic Differential and Stochastic Partial Differential Equations** w <https://youngstats.github.io/post/2022/06/03/regularization-by-noise-for-stochastic-differential-and-stochastic-partial-differential-equations/>

September 26–30: San Diego, USA, and online. **[Hybrid] 2022 SIAM conference on Mathematics of Data Science (MDS22)**  
w <https://www.siam.org/conferences/cm/conference/mds22>



## October 2022

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

## December 2022

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

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

## January 2024

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

## March 2023

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

# International Calendar *continued*

## March 2023 continued

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

## May 2023

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

## July 2023

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


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

## August 2023

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

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

## January 2024

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

## March 2024

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

## July 2024


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

## August 2024

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

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

## August 2025

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

## August 2026

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

Are we missing something? If you know of any statistics or probability meetings which aren't listed here, please let us know.

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

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

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### 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.

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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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4: June/July	<b>May 1</b>	May 15	June 1
5: August	<b>July 1</b>	July 15	August 1
6: September	<b>August 15</b>	September 1	September 15
7: Oct/Nov	<b>September 15</b>	October 1	October 15
8: December	<b>November 1</b>	November 15	December 1

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