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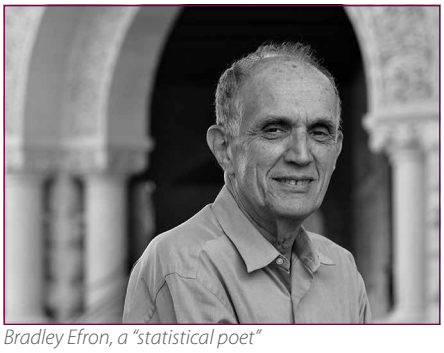
International Prize in Statistics

The International Prize in Statistics is awarded to Bradley Efron, Professor of Statistics and Biomedical Data Science at Stanford University, in recognition of the "bootstrap," a method he developed in 1977 for assessing the uncertainty of scientific results that has had extraordinary and enormous impact across many scientific fields.



Bradley Efron, a "statistical poet"

With the bootstrap, scientists were able to learn from limited data in a simple way that enabled them to assess the uncertainty of their findings. In essence, it became possible to simulate a potentially infinite number of datasets from an original dataset, and in looking at the differences, measure the uncertainty of the result from the original data analysis. Made possible by computing, the bootstrap powered a revolution that placed statistics at the center of scientific progress. It helped to propel statistics beyond techniques that relied on complex mathematical calculations or unreliable approximations, and hence it enabled scientists to assess the uncertainty of their results in more realistic and feasible ways.

"Because the bootstrap is easy for a computer to calculate and is applicable in an exceptionally wide range of situations, the method has found use in many fields of science, technology, medicine, and public affairs," says Sir David Cox, inaugural winner of the International Prize in Statistics. Indeed, Cornell University and EPAM Systems Inc. examined research databases worldwide and found that since 1980, the bootstrap (and multiple variations on the term, such as bootstrapping) has been cited in over 200,000 documents in more than 200 journals worldwide. Citations are found in fields like agricultural research, biochemistry, computer science, engineering, immunology, mathematics, medicine, physics and astronomy, and the social sciences.

"While statistics offers no magic pill for quantitative scientific investigations, the bootstrap is the best statistical pain reliever ever produced," says Xiao-Li Meng, Whipple V. N. Jones Professor of Statistics at Harvard University [and IMS President]. "It has saved countless scientists and researchers the headache of finding a way to assess uncertainty in complex problems by providing a simple and practical way to do so in many seemingly hopeless situations."

"The bootstrap was a quantum leap in statistical methodology that has enabled researchers to improve the lives of people everywhere," says Sally Morton, Dean of the College of Science and Professor of Statistics at Virginia Tech. "Efron is a statistical poet of enormous beauty, applicability and impact."

Efron will accept the prize next summer at the 2019 World Statistics Congress in Kuala Lumpur. Read more about Brad Efron and the bootstrap in the online version of this article: http://bulletin.imstat.org/2018/11/efron-international-prize-in-statistics/

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Contact information

Executive Committee

IMS Members' News

Distinguished Statistician Colloquium Series resumes with Grace Wahba

Haim Bar & Dipak K. Dey, University of Connecticut, report:

After a six-year hiatus, this year we renewed the Distinguished Statistician Colloquium Series. With generous funding from Pfizer, the American Statistical Association, and the Department of Statistics at UConn, the 24th colloquium in the series was held on September 26–27, 2018 and featured Professor Grace Wahba from the University of Wisconsin–Madison. Prof. Wahba is renowned for her work in statistical theory and the development of efficient numerical and statistical methods for large data sets, and has developed methods with applications in biostatistics, weather prediction, machine learning, climate science, and more. She is a member of the US National Academy of Sciences, and a Fellow of IMS, ASA, SIAM, the American Academy of Arts and Sciences and the American Association for the Advancement of Science.

Grace Wahba

Grace Wahba was interviewed by Dr. Hao Helen Zhang from the University of Arizona and Dr. Yoonkyung Lee from The Ohio State University.

The first day included a reception, a rehearsal colloquium and interview, and a banquet dinner. It was held at the Alumni Center, and was attended by many faculty members, Pfizer employees, and representatives from the New England Statistics Symposium (NESS). Introductions were given by Dr. Dipak Dey, UConn Board of Trustees Distinguished Professor of Statistics, and Dr. Kannan Natarajan, Head of Global Biometrics and Data Management at Pfizer. Dr. Xiao-Li Meng, Professor of Statistics at Harvard University and Past President of the New England Statistical Society, delivered an entertaining speech and a toast before dinner. The colloquium—*Pairwise Density Distances and Reproducing Kernel Hilbert Spaces, and an approach to treating personal densities as attributes in a Smoothing Spline ANOVA model*—and the interview were filmed on September 27 in UConn's Dodd Research Center. The videos will be added to the ASA YouTube channel in the near future.

Michael Jordan and Bin Yu selected for Chan–Zuckerberg Research Awards

IMS Fellows Michael I. Jordan (UC Berkeley) and Bin Yu (UC Berkeley) are working on two of the six projects that have just received a highly selective Chan–Zuckerberg Intercampus Research Award. Only six awards were made, out of 83 applications; these projects will collectively receive $9.7 million over three years.

Michael Jordan is one of the Project Leaders for the team working on *"Machine learning for interpreting rare genetic variation in comprehensive newborn screening and pharmacogenetics."* In California, 500,000 babies are born each year, some of whom have genetic mutations that cause disease or altered responses to medications. Recognizing which genetic variants cause problems is surprisingly difficult, impeding the use of genetic information to inform early intervention or the customization of patient care. The team has drawn together experts in biology, computer science, medicine, and ethics to develop new methods for identifying genetic variants that cause disease, focusing on serious newborn diseases and on gene variants that affect patient responses to medications. The team will collect experimental data and develop innovative machine learning techniques to predict the functional consequences of genetic variants.

Bin Yu is one of the Project Leaders of a team which will work on *"Multi-scale deep learning and single-cell models of cardiovascular health."* The team will develop methods to accelerate the pace of discovery of genetic determinants for cardiovascular disease. They will develop new statistical machine learning tools to analyze morphological and functional parameters of the heart from clinical images, an approach that can be scaled to analyze millions of images. They will also develop machine learning tools based on enhanced iterative random forests (iRF) to identify genetic variants likely to account for some of the variation in cardiovascular morphology and function observed in their analysis of clinical images, utilizing publicly available large-scale clinical data sets and local patient cohorts. Finally, they will identify genetic variants responsible for functional phenotypes using cell-based in vitro model systems.

Priscilla Chan and Mark Zuckerberg are co-founders of The Chan Zuckerberg Initiative. The CZ Biohub, a nonprofit medical research organization, connects UC Berkeley, UCSF and Stanford to conduct "research that helps solve big health problems", and "support the best and brightest biologists, scientists, engineers and technologists." Read more about the awards at https://www.czbiohub.org/intercampus-research-programs/

Nominate for IMS Awards

There is still time to consider who to nominate for these distinguished IMS awards. Nominations are open for the following IMS Awards for 2019:

- **Tweedie New Researcher Award**, deadline December 1.
- **Carver Medal**, deadline February 1.
- **IMS Fellowship**, deadline January 31.

For more information about the nomination processes for each award, please visit https://www.imstat.org/ims-awards/

Steve Fienberg's widow in mass shooting

We are deeply saddened to report that Steve Fienberg's widow, Joyce, was among the 11 people murdered on October 27 at the Tree of Life synagogue in Pittsburgh, USA. She was 75. Former IMS President Steve Fienberg passed away almost two years ago: http://bulletin.imstat.org/2017/04/obituary-stephen-e-fienberg-1942-2016/. Our thoughts are with Joyce's family and friends, and those of the other victims.

= access published papers online

IMS Journals and Publications

Annals of Statistics: Ed George and Tailen Hsing
http://imstat.org/aos
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Annals of Applied Statistics: Tilmann Gneiting
http://imstat.org/aoas
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Annals of Probability: Amir Dembo
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Annals of Applied Probability: Bálint Tóth
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IMS Monographs and *IMS Textbooks:* Nancy Reid
https://www.imstat.org/journals-and-publications/ims-monographs/

IMS Co-sponsored Journals and Publications

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http://imstat.org/ejs
http://projecteuclid.org/ejs

Electronic Journal of Probability: Andreas Kyprianou
http://ejp.ejpecp.org

Electronic Communications in Probability: Giambattista Giacomin
http://ecp.ejpecp.org

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

Statistics Surveys: David Banks
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http://projecteuclid.org/ssu

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

IMS-Supported Journals

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

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

Bayesian Analysis: Bruno Sansó
https://projecteuclid.org/euclid.ba

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

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

IMS-Affiliated Journals

Observational Studies: Dylan Small
https://obsstudies.org/

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

Stochastic Systems: Shane Henderson
http://www.i-journals.org/ssy/

The world is loving us (almost surely). Can we love back, passionately?

If you're feeling overwhelmed at the world's new-found interest in and demand for statistics, IMS President Xiao-Li Meng has a call to arms:

"I teach statistics" used to be an effective response when I was too tired to chat with a stranger, except that once it excited a taxi driver: "I teach mathematics too!" (It was on my way to the 2010 JSM in Vancouver, and I was grateful that we didn't drive by any Mobius strip mall. It turned out that driver enjoyed traveling in topological spaces while being sleepless in Seattle, but preferred traversing in the Euclidian space during the fund-less summer.) These good quiet days are behind us. Now the same response would almost surely invite trouble: "Oh, great—what's your view on AI?" or "Ah, so can you tell me why the 2016 election predictions were so wrong?"

Most human beings love to be loved, even when they cannot love back. But as a profession that loves conditioning, we should have a particularly good understanding that unconditional love almost surely does not exist, or at least it does not last. We have worked hard and long to attract the public and other fields to statistics and statisticians. Now they are infatuated and maybe even enamored with us (if you need statistical evidence, contact the statistics department chair at University of Toronto or at Yale University or at …). But how are we responding?

My checking of our pulse suggests that our collective heart is not beating as fast as one in the thralls of passionate love. (I sincerely hope that you have had direct measurements of that speed, and with few measurement errors.) I am acutely aware of the danger of making anecdotes plural. But since I have anecdotes at almost every resolution level, I at least can defend my emphasis on "Case after case after case …"

At the individual level, I have lost count of the times that I had to swallow that "Yes" bubbling up inside of me when invited to yet another intellectual or pedagogical getaway, knowing how many getaways that I already could not get away from.

At the local level, my colleagues and I lamented for years about not being informed of various university initiatives and activities involving statistics. Now I am getting a full serving of the mantra, "Be careful of what you wish for". Every time I hear "Xiao-Li, we really need some statisticians involved. Can you or someone from your department help?", I wish I were a ventriloquist. I know the only responsible answer would be "No." I am already sleepless in Seattle, in Chicago, in Vilnius, in Park City, in Hong Kong, in Dublin, or in any other place a stochastic encounter has successfully enticed me to visit. And I'd be making the most obnoxious assumption that my colleagues are sleeping more, and hence I could volunteer them without feeling guilty. But I really don't want the "No" to come out of my mouth, or those of my colleagues. How would we react if a group had complained for years that we had ignored them, but when we finally approached them, their response was effectively "Don't you see we are all busy?"

At the national level, I was invited to the second annual Data Science Leadership Summit (October 12–13, Park City), representing IMS. It was a great gathering of many leaders of data science, mostly from university data science centers/institutions/initiatives. Among about 60 attendees, there were only four people who self-identified as statisticians. Was this due to the organizers' disciplinary bias? Possibly for the first Summit, whose report stated: "Future incarnations of this Summit should be sure to include as equal partners other foundational disciplines of data science, e.g., statistics." The Summit organizers did try, repeatedly, this second time around to attract us, but we statisticians are just too busy. Indeed, if I hadn't been able to back out of a workshop I had previously committed to, I'd not have made it either.

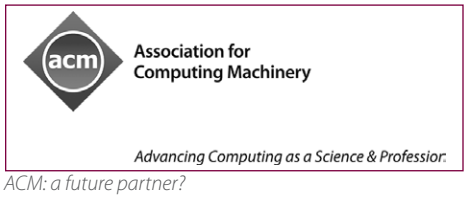
These anecdotes become more alarming when combined with some depressing statistics. At the annual CATS (Committee on Applied and Theoretical Statistics, of the National Academies of Sciences) meeting, at 2018 JSM in Vancouver (no evidence of topologists driving taxis this time), and at the most recent NSF (National Science Foundation of US) workshops on "Statistics at the Crossroads", I had conversations with multiple NSF program directors. They all urged IMS to encourage its members to play much more active roles "to take advantage of these opportunities and reach out to CS and Math or explore new partnerships with the domain sciences." The opportunities they referred to include those listed in the article on page 6 by the division Director of Mathematical Sciences, Dr. Juan Meza, to whom I am grateful for his willingness to accept my invitation to write directly to IMS members. Their urges are evidence-based, because the participation rates of statisticians and probabilists at the NSF level, from applying for grants to providing NSF with feedback, are significantly lower than those of more action-oriented disciplines such as computer science. In some cases, our participation rate is practically

Continues on **page 5**

zero—how can we defend ourselves with zero participation rate when someone argues that we are essentially self-marginalizing?

"What are you talking about? I am just as sleepless as you are—what on Earth *more* do you want me to do?" If you are enraged by my suggestion of self-marginalization, then please join me to brainstorm how we can turn our enragement into engagement, *collectively*. There are only three strategies to address the challenge of demand exceeding supply: (i) increase the supply; (ii) reduce the demand; and (iii) use the existing supply more effectively. IMS has good opportunities to adopt (i) and (ii). For one thing, being an internationally leading scholarly society makes us attractive to other societies that are seeking to expand their efforts in data science. During that Data Science Leadership Summit, I met with the new executive director of ACM (Association for Computing Machinery), the world's largest educational and computing society. The sheer size of ACM makes IMS o(1) with respect to every numerical metric I can think of: ACM has about 100,000 members, over 50% of whom reside outside of US, over 860 professional and student chapters with students participating from 500 colleges and universities worldwide, with about 300 annual conferences, etc. Yet ACM wants IMS as an equal partner in the intellectual pursuit of building the foundations of data science precisely because of our international status in leading theoretical statistics and probability.

I am happy to report that an **IMS task force on the partnership with ACM has been established, with a charge to explore joint conferences, publications, membership, etc.**



ACM: a future partner?

Even if we succeed only in engaging and recruiting 0.5% of ACM membership, it would increase our current membership and capacity by about 15%! Another **IMS task force is looking into extending NSF effort on behalf of statistical PhD education in the United States to international programs**. Such pursuits enhance IMS's outreach and education channels and efforts, as guided by (i) and (ii)—the more people are equipped with statistical and probabilistic insights and toolkits, the more supply of our workforce and the fewer people there will be who need to rely on others to deal with statistical and probabilistic problems.

Regarding (iii), there are fruits hanging low, or high, or currently too unripe. Whereas each of us may feel overwhelmed, collectively we have significantly more supplies, as long as we make a habit of trusting "the unusual suspects" (until someone proves to be not trustworthy), a relatively low-hanging fruit. For example, among all the committee chairs and members I appointed as IMS president, over ⅓ had never served on any IMS committees or task force. All these "first timers" responded positively, and typically more swiftly than "the usual suspects." This reminded me that "supply" is a relative concept. Surely the "first timers" may have a longer learning curve, but all of us had our first time, and we owe our success to the trust of the generations that preceded us. I, for one, benefited greatly from the trust of the founding editor-in-chief of *Statistica Sinica*, Professor George Tiao (Happy 85th, George!), who asked me to help screening many submissions during my first year as an assistant professor.

Among very unripe fruits is a long overdue reform of our incentive systems, including the university tenure system. The current systems are not conducive for building broader pipelines (see my first President's Column at http://bulletin.imstat.org/2018/09/ims-younger-broader-and-deeper/) or engaging in time-consuming collaborative efforts. A more effective system should explicitly recognize that transdisciplinary collaborative research typically requires a more holistic set of talents and skills to succeed than does within-disciplinary research. Having served as a dean, I know all too well why it induces a great laugh when the answer to "How many deans does it take to change a light bulb?" is "Change? Did you just say *change*?" Change is hard—otherwise *I Love You, You're Perfect, Now Change* would likely not to be the second-longest running Off Broadway musical.

But love fuels change. Love induces and demands passion, and passion is most effectively expressed by action. If we really want the world to sustain its love for our profession, we must work collectively and creatively to harvest this grand passion fruit: the reprioritization of our profession to equalize our value systems for influential scholarly pursuits and for impactful collaborative effort, and to maximally reward those who can do both well. IMS is uniquely positioned to lead this reform on the global stage, and I therefore invite each of you to contribute in whatever ways you can to this (collective) labor of love, by love, and for love.

Seeking Novelty in Data Sciences

Juan C. Meza is Director of the Division of Mathematical Sciences at the US National Science Foundation. IMS President Xiao-Li Meng invited him to share some opportunities to reach out to Computer Science and Math or explore new partnerships with the domain sciences.

These are exciting times in mathematics and statistics. One reason for this is the exponential increase in the amount of data in many fields due to the increased power of observational, experimental, and computational tools and techniques. The McKinsey report, *Big data: The next frontier for innovation, competition, and productivity* [1] found that, "the percentage of data stored in digital form increased from only 25 percent in 2000 (analog forms such as books, photos, and audio/video tapes making up the bulk of data storage capacity at that time) to a dominant 94 percent share in 2007". This comes from all sectors of life including the health care industry, social media, and applications in the Internet of Things. Similar trends have occurred in many scientific and engineering fields.

This explosion of data has led to situations where scientists must analyze massive data sets. Other applications require analysis of large numbers of streams of small data sets. Today, other issues have also come to the forefront, including the increasingly heterogeneous, unstructured, and real-time aspects of many data sets. The question before us is this: how does one manage and make use of all of this data to generate new knowledge and solve today's problems?

While thinking about this, I had the opportunity to reread a favorite article of mine, "The Future of Data Analysis," by John Tukey [2]. One statement in that article stood out to me: "Statistics has contributed much to data analysis. In the future it can, and in my view should, contribute much more." I found this encouraging, because I believe that mathematics and statistics are in a wonderful position to contribute to data science, even more so than back in 1962 when Tukey wrote the paper above.

James Kurose, NSF

At the National Science Foundation, ten new initiatives, called the **10 Big Ideas**, were proposed in 2016. These were intended to be "long-term research and process ideas that identify areas for future investment at the frontiers of science and engineering." The Big Ideas also represented "unique opportunities to position our Nation at the cutting edge—indeed, to define that cutting edge—of global science and engineering leadership".

Among those Big Ideas, one of them is of particular importance to the statistics community—**Harnessing the Data Revolution**. With a view towards understanding how to take advantage of the Big Data revolution, two of the main goals of this program are to engage NSF's research community in the pursuit of fundamental research in data science and engineering, and the development of a 21st-century data-capable workforce.

But what do we mean by data science? There has been much debate on what constitutes data science, who practices this new science, and how one should teach it. Dhar [3] gave one answer, saying, "Data science is the study of the generalizable extraction of knowledge from data," and that "a data scientist requires an integrated skill set spanning mathematics, machine learning, artificial intelligence, statistics, databases, and optimization, along with a deep understanding of the craft of problem formulation to engineer effective solutions". As Tukey had pointed out, there are many different ways to extract knowledge from data, and statisticians have been studying this area and developing statistical models for many years. Shmueli [4] in turn provided interesting insights into statistical models and some of the differences between two types, explanatory and predictive modeling, arguing that we

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need to do both. In one area that has received a lot of attention, machine learning, Daubechies [5] says, "Our current mathematical understanding of many techniques that are central to the ongoing big-data revolution is inadequate, at best".

Within the Harnessing the Data Revolution (HDR) initiative, we are seeking to support innovative research in data science. One of the first initiatives within the HDR program was the Transdisciplinary Research in Principles of Data Science (TRIPODS) program. In 2017, the Division of Mathematical Sciences (DMS), along with the Division of Computing and Communication Foundations, made 12 awards to 14 different institutions for a total of $17.7 million. The overarching goal is to bring together the statistics, mathematics, and theoretical computer science communities to develop the foundations of data science. These 12 awards are a first attempt to bring the communities together to form interdisciplinary teams to study these problems. This year these awards were complemented through a new solicitation to include domain-specific applications teaming with the initial awardees. An anticipated Phase 2 of the TRIPODS program will then select a smaller number of larger institutes.

Another initiative is a new joint solicitation between DMS and the NIH National Library of Medicine for Generalizable Data Science Methods for Biomedical Research. Here again, the goal is to develop and strengthen ties between different disciplines to address the questions of data science. In particular, this solicitation plans to support the development of innovative and transformative mathematical and statistical approaches to address important data-driven biomedical and health challenges.

The educational component of data science is also important. In May of this year, the National Academies released a report on Data Science for Undergraduates that had been sponsored by the NSF [6]. The goal of this study was to explore what data science skills are essential for undergraduates, now and in the future, and how academic institutions can structure their data science education programs to best meet those needs. Two key findings were that data science is in its infancy and that it is a unique field that borrows heavily from multiple other fields.

Specifically, with regard to the educational component, they also found that education at all levels will need to evolve as the field evolves and that there must be multiple pathways for undergraduates as a result. They also called out two aspects that are noteworthy; the first is that all students would need to have a certain amount of data acumen, and secondly, that data ethics should be incorporated into the curriculum.

What will the future hold for us, then? At NSF, we are continually looking to see what the emerging trends are and what the community sees as future areas of interest. Towards that end, DMS convened a workshop on October 15–16, 2018, to discuss future trends in statistics. The workshop brought together over 50 researchers from all areas of statistics to discuss six broad themes including: foundations of statistics and data science, statistics and computation, emerging applications, data challenges, inference in the age of big data, and statistics education in the new era. I am looking forward to reading the workshop report.

I started by saying that these are exciting times for our communities. There are great challenges, but also great opportunities. Obviously, there are many different ways of approaching these problems and these discussions will continue for some time. Whatever the ultimate outcomes of these discussions are, it is clear that data in its many forms is now an integral part of how science is done today. And as the field evolves, new strategies, methods, and theory will be needed to address all of the complex data issues arising.

How, then, might we proceed in developing future strategies? Perhaps Tukey once again can provide us with some guidance. If I may paraphrase him, "Is it not time to seek out novelty in data sciences?" And who better to do this than those who have already contributed so much to data sciences?

1 James Manyika, Michael Chui, Brad Brown, Jacques Bughin, Richard Dobbs, Charles Roxburgh, Angela Hung Byers, *Big data: The next frontier for innovation, competition, and productivity*, McKinsey Global Institute, 2011.

2 Tukey, John W., The Future of Data Analysis. *Ann. Math. Statist.* **33** (1962), no. 1, 1–67. doi:10.1214/aoms/1177704711. https://projecteuclid.org/euclid.aoms/1177704711

3 Dhar, Vasant, Data Science and Prediction, ACM., *Communications of the ACM*, 2013,Vol. 56, no. 12, 2013

4 Shmueli, Galit, To Explain or Predict, *Statistical Science*, 2010, Vol. 25, No. 3, 289–310, DOI:10.1214/10-STS330, Institute of Mathematical Statistics, 2010.

5 Daubechies, Ingrid, Machine Learning Works Great—Mathematicians Just Don't Know Why, *Wired Magazine*, Dec. 12, 2015.

6 National Academies of Sciences, Engineering, and Medicine. 2018. *Envisioning the Data Science Discipline: The Undergraduate Perspective: Interim Report.* Washington, DC: The National Academies Press. https://doi.org/10.17226/24886.

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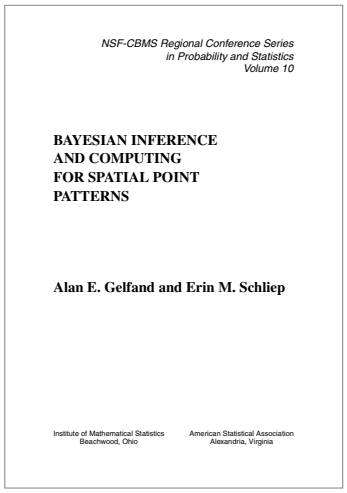
Regional Conference Series in Probability and Statistics

Volume 10

Bayesian Inference and Computing for Spatial Point Patterns

by Alan E. Gelfand, Duke University, and Erin M. Schliep, University of Missouri



This monograph results from a CBMS short course given by Alan Gelfand at the University of California at Santa Cruz in August 2017. It extracts a portion of the lecture material that focuses on spatial point patterns, and substantially expands it, in addition to providing introductory material. The decision to focus on spatial point pattern models reflects the fact that this area of spatial analysis has, arguably, received the least attention in the literature, and even less within the Bayesian community. At this point, the other, more mainstream spatial and spatio-temporal material is discussed and readily available in many books. The monograph provides a forum for presentation of novel Bayesian inference and model fitting material which has been very recently developed by Gelfand and collaborators. This material is predicated on an assumption which currently drives much Bayesian work: if you can fit a Bayesian model and if you can simulate realizations of the model, you can do full Bayesian inference under the model.

Read the preface at https://projecteuclid.org/euclid.cbms/1530065033

Order your copy of *Bayesian Inference and Computing for Spatial Point Patterns* now (softcover, US$80.00)

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There's fun in thinking just one step more

Ruobin Gong, Rutgers University, writes:

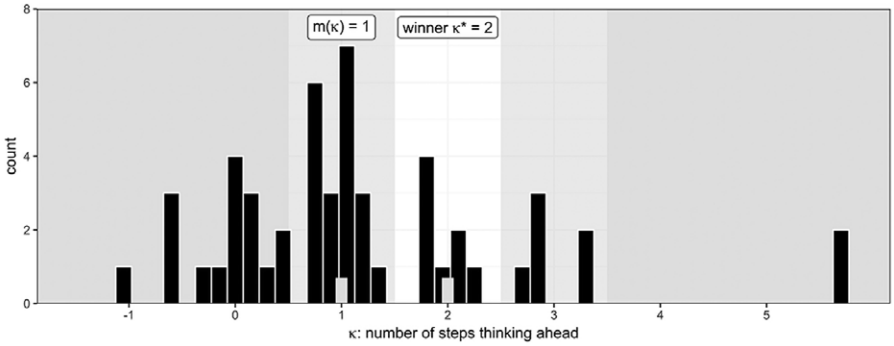
Suppose that you and a group of friends play the following game. Everybody guesses an integer between 1 and 100. You win by getting closest to half of the median sample of guesses, and the winner takes home the dollar amount s/he had guessed. What number would you guess?

In the winter of 2011, the then department Chair Xiao-Li Meng entertained the crowd gathered at the Harvard statistics holiday party with the above game. It turned out that of all the guesses, the median was 13, and two guesses—five and eight—came closest to half of that. Hillel Bavli, a fellow student and now a professor of Law at SMU, and I were tied as winners, both pleasantly surprised to take home a cheque cut to us by the Chair himself.

I never cashed that $8 cheque; it reminds me of the inspirational and fun time at Harvard. The game we played was in fact a variant of a classic puzzle in game theory called "Guess ⅔ of the average" [3]. To many of us students in the room, this was a first—and a vivid—demonstration. As the name suggests, in this classic setting the participants would aim at ⅔ of the average by guessing a real number in [0, 100]. The winner would take home a prize of a pre-determined amount. (At parties, one can spice things up by letting the winning guess determine the prize amount. Median is also preferred to the mean since it is easier to tabulate manually.)

The catch is this. If all participants were not only perfectly rational, but also know so of all others, the optimal winning strategy for the classic setting is for everyone to guess zero. In reality however, neither assumption is true: we not only depart from rationality, but know others will, too. A realistic winning strategy must be calibrated to the pool of opponents with whom one is sharing the fun, and that can vary substantially from sample to sample. The Danish newspaper *Politiken* [2] and *The New York Times* [1] both tried this game on large pools of readers, with 19,196 and 56,000 respondents, and winning guesses of 21.6 and 19, respectively.

Figure 1: *Guess ½ of the median: data from Rutgers annual retreat party (n=52). Patterns of clustering around κ values {0, 1, 2, 3}. Winning strategy is κ* = 2, corresponding to guesses 12 and 13.*



How does one come up with a sample-calibrated strategy? There is one mental path many typically follow, with or without knowing. The player begins by estimating the number of "steps" (denoted by κ) by which the opponents are thinking ahead. The most naïve opponent thinks $\kappa = 0$ step ahead, and guesses completely randomly. Thus, a roomful of "step 0" opponents would likely produce a median guess around 50. To win against them, one needs to think $\kappa = 1$ step ahead and guess around $50 \cdot p$, where p is the fraction of the median that the game sets to aim. (For example, p=½ for the Harvard party game.) This reasoning applies recursively: if most opponents are "step κ" players, in order to outplay them, one needs to think $\kappa + 1$ steps ahead and guess around $50 \cdot p^{\kappa+1}$, and so on. Given one guessed x, we can work backwards and estimate the number of steps s/he thinks ahead to be $\kappa = \log_p(x/50)$. Thus, the winning strategy to is to estimate as accurately as possible $m(\kappa)$, the median step by which the opponents are thinking ahead, and beat them by thinking precisely one step more: $\kappa^* = m(\kappa) + 1$.

Over the years, fond memories of my serendipitous win have stimulated my curiosity. I regretted that the raw guesses were not preserved, and longed for a close look at the first-hand evidence of adaptive human thinking. Today came the perfect chance to spread the fun and recreate the data. At the Rutgers statistics department annual retreat party, held in the log cabin of Rutgers Gardens amid the beautiful fall foliage, I had the chance to administer the game to 52 new colleagues and students. The outcome was surprisingly clean: the median was 25 and its half 12.5, corresponding to $m(\kappa) = 1$ and a winning strategy $\kappa^* = 2$. Three winners emerged from the game: two (Rong Chen and Yisha Yao) guessed 12 and one (Steven Buyske) guessed 13. Raw guesses spanned the entire allowable range, from as low as 1 to as high as 100, and are tabulated in Figure 1 in terms of individuals' κ. It became apparent that the most fun occurs when, as in most competitive settings, one thinks *just one step more than the rest*—no more, no less!

1 Quearly, K. 'How readers fared in Upshot's Number Puzzle.' *The New York Times*, Aug 2015. [Online; accessed 27 October 2018].

2 Schou, A. 'Gœt-et-tal konkurrence afslører at vi er irrationelle.' *Politiken*, Sept 2005. [Online; accessed 27 October 2018].

3 Wikipedia contributors. 'Guess ⅔ of the average.' *Wikipedia, The Free Encyclopedia*. https://en.wikipedia.org/w/index.php?title=Guess_2/3_of_the_average&oldid=862246390, 2018. [Online; accessed 27 October 2018].

Peter Gavin Hall Early Career Prize

Peter Hall played a significant role throughout his professional career in mentoring young colleagues at work and through professional society activities. To memorialize Peter in a manner that matched his dedication, the IMS Council created the Peter Gavin Hall Early Career Prize. To date, we have received **over $86,000** in pledges and donations. A list of all donors to date is in the sidebar. The financial prize will be given annually to one or more active researchers in statistics, broadly construed, within eight years since completion of a PhD. It is intended to recognize excellence in research as well as research potential.

The IMS Council recently approved the details of the prize as noted below. The first prize is expected in 2020 with a deadline of December 1, 2019 for nominations. So, you can start thinking about who to nominate for this award!

About the Prize

Purpose: To recognize early career research accomplishments and research promise in statistics, broadly construed.

Eligibility: An early-career researcher is one who received their doctoral degree in one of the eight calendar years preceding the year of nomination, or in the year of nomination, meaning any of the years 2012–2019 for the 2020 prize, which has a nomination deadline of December 1, 2019. The IMS gives the award committee latitude to consider nominees with extenuating circumstances that may have delayed professional achievements. Nominations may be made by any member of the IMS. Nominees need not be IMS members.

Form of the Prize: The award consists of a plaque, a citation, and a cash honorarium. It will be presented at the IMS Presidential Awards ceremony held at the IMS annual meeting. The recipient will be allotted time to acknowledge receipt of the Prize.

Nomination/Submission Process: Electronic submission is required and includes: a nomination form, an extended abstract with highlights of research achievements, a CV, and two letters of recommendation (beyond a letter from the nominator). At most two recommendation letters may be submitted by any one individual in a given year.

Further donations welcome!

To make a donation to this (and/or another) IMS fund, please visit https://www.imstat.org/shop/donation/

Funds available for: Blackwell Lecture; IMS Gift Membership Program; Hannan Graduate Student Travel Award; Le Cam Lecture; New Researcher Travel Award; Open Access; Peter Hall Early Career Prize; Schramm Lecture; Scientific Legacy; Tweedie New Researcher Award. Details on these funds: http://www.imstat.org/contribute-to-the-ims/

THANK YOU ALL!

Peter Gavin Hall Early Career Prize Fund donors (to date)

Anonymous
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George Alastair Young
Harrison Zhou
Johanna F. Ziegel

Interview: Dietrich Stoyan


Dietrich Stoyan (left) with Elja Arjas

Elja Arjas kindly agreed to interview Dietrich Stoyan, a renowned German probabilist, statistician, and an IMS Fellow, who has written an unusual book about his rather unusual life. Dietrich was born in 1940, at the time when WWII was raging in Europe. He lost his father in the war, and afterwards his mother did not have the financial means to support a family of four children. They lived in the Eastern German province of Saxony-Anhalt, which was occupied by the Russian Forces and later became part of GDR, the German Democratic Republic, established in 1949. After university studies in Dresden, Stoyan became lecturer in the small Bergakademie Freiberg university, governed under the strict control of the communist party of the GDR. He was an outsider to this system, or even a dissident. But then came the dramatic change (in German, *die Wende*): In 1989 the Berlin wall was taken down, and the following year GDR disappeared from the map of Europe. It also brought a big change to Stoyan's life personally: he became the Rector (president) of Bergakademie Freiberg. Stoyan's book, originally written in German, documents all this, and it was recently translated into English.

I met Dietrich Stoyan for the first time in 1988 in East Berlin, when he delivered the Opening Lecture at the European Meeting of Statisticians (EMS), for which GDR was then the host country, and I was Program Chair. Stoyan and I met again recently in his home town, Freiberg, and had lunch together. I put many questions to him relating to his book, and to his life more generally, which he answered. Here is a small sample of the many topics we discussed:

EA: *Why did you write this book?*
DS: I have led an interesting life, during interesting times. There are many stories to tell about events which may be hard to believe but which are real and often funny. An example, described in the book, is my attempts at correspondence with Wiley in the context of writing a review of a book by Peter Hall, by using letters, a post card and even a telegram. I can relate such events still now in detail because I kept a diary. But the book also shows how a scientist who was not active in university management issues suddenly changed his mind, transforming himself from a passive and even negative outsider to an activist and leader.

EA: *How did the communist regime influence your possibilities for scientific work?*
DS: First, I must say that it generously financed my education, including university studies, and the same was true for my three siblings. But later, in my professional work, it did not give me the freedom a scientist needs. In short, academic life in the GDR was life under a dictatorship. Important books and journals were only available in very limited numbers, or not at all, in the whole country. Travel to the West would have required a special exit visa, from which privilege I was excluded because I was not a member of the SED, the communist party. Today, unfortunately, this situation may still be similar in many countries of the world.

EA: *I notice that almost all your publications, including the many books you have written, are in English. Am I right in assuming that this was not a standard solution in your scientific environment in the mid 1970s, and that it required a great deal of additional effort from you?*
DS: I did not learn English at school, and only studied it later as a university student, trying then to practice my skills by writing papers and reviews for the Zentralblatt of Mathematics. In part for this reason, giving the Opening Lecture at the EMS in 1988 was a major challenge for me. But I had great helpers in writing my books (Daryl Daley and Wilfrid Kendall), and at an early stage I was encouraged by Tomasz Rolski. Fortunately, I understood early enough that I can survive as a scientist only by writing in English.

EA: *Your book ends with a description of how your portrait, in the full traditional attire of the Bergakademie Rector, was painted in oil by a famous artist. Given all these experiences in your life—sometimes difficult, but also exciting—would you agree with the view expressed in the title of Shakespeare's play, "All's Well That Ends Well"?*
DS: Absolutely!

Dietrich Stoyan's book, *In Two Times: A former East German scientist tells his story of life in two Germanies* is available from Amazon.

Recent papers

Statistical Science: Volume 33, No 3, August 2018

The central purpose of *Statistical Science* is to convey the richness, breadth and unity of the field by presenting the full range of contemporary statistical thought at a moderate technical level, accessible to the wide community of practitioners, researchers and students of statistics and probability. Access papers at **https://projecteuclid.org/info/euclid.ss**

Bernoulli: Vol. 24, No 4B, November 2018

Bernoulli is the journal of the Bernoulli Society for Mathematical Statistics and Probability, issued four times per year. It is an IMS-supported journal, providing a comprehensive account of important developments in the fields of statistics and probability, offering an international forum for both theoretical and applied work. Access papers at **http://projecteuclid.org/euclid.aoas**

My 'sexy statistics'—take or LV it

Radu V. Craiu is Professor and Chair of the Department of Statistical Sciences at the University of Toronto. He writes:

This past summer I was asked in a Q&A session what I consider to be a "sexy" topic in statistics [1]. Not being able to speak about sexiness in front of a large crowd in the middle of the day, my mention of copulas was slightly tongue in cheek. But the question lingered.

After giving it some more thought, I have realized that statistics has a certain *je ne sais quoi* when it comes to building expectations out of mere life samplings (pun intended). Maybe that's because in our models there is always *more than meets the eye*, as ourselves we often *operate behind the scenes*, thus being, to put it bluntly, *almost invisible* in the public eye, or more charitably, veritable *ghost-benefactors* of science.

In other words, we play the role of *latent variables* (LV) in this exciting age of data science emancipation. And that is why, if I had to point *now* to a sexy idea in statistics, I would have to go with **LV modelling**.

From the early days of statistics, LV's have had the purpose of entering our minds, with Spearman's 1904 study [2] of general intelligence being credited for postulating the first LV model. Some may argue that the construct goes back to Galton [3] who, in 1888, was already stating:

> *"Two variable organs are said to be co-related when the variation of the one is accompanied on the average by more or less variation of the other, and in the same direction… It is easy to see that co-relation must be the consequence of the variations of the two organs being partly due to common causes."*

In any case, I know statisticians are not the only ones riding on the ephemeral cloud of unobservables, but one can argue that this should strengthen the nomination rather than weaken it. The LV seems to be the many-faced creature that glues together our search for the impalpable, be it that elusive genetic effect, the secret for having limitless brain power or the golden recipe for success in business. I must mention that LV's would do well in a popularity contest with a whopping 25.7 million hits on Google and over 2.8 million hits on its more contained Scholar relative. There is a genuine need for a superhero here—the rest of the world may be saved by Superman, but when the LV's abscond with the truth, we could follow Xiao-Li Meng's advice [4] and dial M for Missingman.

If "conditioning is the soul of Statistics," as Joe Blitzstein so poetically and succinctly put it in class one day, one could argue that computational algorithms are its feet. And to elevate the discourse to almost Blitzstein-ian level I will remind you that computational statisticians have harnessed the angelic nature of LV's to speed up their sluggish algorithms. As we walk faster we must ask what else is Data Augmentation [5] but a way of creating shortcuts in alternative universes that possess more dimensions than the one in which we were originally doomed to run our MCMC chains? And when Andrew Gelman [6] argues that our LV-based computational tricks lead to new insights about science, our soles—and souls—soar on invisible wings and the circle feels complete.

Finally, if you are still unconvinced and you want to know more about why the LV is the richly adorned gate through which the Ouroboros rolls in to become an honorary member in your department, remember the hundreds, nay, thousands of LV's deeply embedded in the learning algorithm [7] that allows you to converse in that foreign language you never got round to learning, or to take a nap in your car's driver seat while it is driving.

So, what would *your* sexy concept in statistics be?

Watch out for that new member in your department…

1 The author thanks Thomas CM Lee for his curiosity.

2 Spearman, C. (1904). '"General Intelligence," objectively determined and measured.' *The American Journal of Psychology*, **15**(2), 201–292.

3 Galton, F. 'Co-relations and their Measurement, chiefly from anthropometric data.' *Proc. Roy. Soc. London* **45** (1888): 135–145.

4 Meng, Xiao-Li. 'Missing data: dial M for ???' *Journal of the American Statistical Association* 95.452 (2000): 1325–1330.

5 Tanner, Martin A., and Wing Hung Wong. 'The calculation of posterior distributions by data augmentation.' *Journal of the American Statistical Association* 82.398 (1987): 528–540.

6 Gelman, Andrew. 'Parameterization and Bayesian modeling.' *Journal of the American Statistical Association* 99.466 (2004): 537–545.

7 LeCun, Yann, Yoshua Bengio, and Geoffrey Hinton. 'Deep learning.' *Nature* 521.7553 (2015): 436.

IMS meetings around the world

Joint Statistical Meetings: 2019–2023

IMS sponsored meeting

IMS Annual Meeting @ JSM 2019

July 27–August 1, 2019. Denver, CO, USA.

w http://ww2.amstat.org/meetings/jsm/2019/

We hope you'll join us in Denver for the 2019 IMS Annual Meeting, in conjunction with JSM. With more than 6,500 attendees (including over 1,000 students) from 52 countries, and over 600 sessions, it's a busy few days! The theme this year is *"Statistics: Making an Impact."*

Anyone can propose a Topic-Contributed Session for JSM 2019! Topic-contributed sessions are a great way to bring speakers together to present about a shared topic, so if you have a great idea for a JSM session, check out http://ww2.amstat.org/meetings/jsm/2019/topiccontributed.cfm Topic-contributed session proposals are due December 12

IMS sponsored meetings: JSM dates for 2020–2024

JSM 2020	**IMS Annual Meeting @ JSM 2021**	**2022 Joint Statistical Meetings**	**IMS Annual Meeting @ JSM 2023**	**JSM 2024**
August 1–6, 2020	**August 7–12, 2021,**	**August 6–11, 2022**	**August 5–10, 2023**	**August 3–8, 2024**
Philadelphia, PA	**Seattle, WA**	**Washington DC**	**Toronto, ON, Canada**	**Portland, Oregon**

IMS co-sponsored meeting

The Tenth International Conference on Matrix-Analytic Methods in Stochastic Models

February 13–15, 2019

The University of Tasmania, Hobart, Australia

w http://www.maths.utas.edu.au/People/oreilly/mam/mam10.html

IMS Representative on Program Committees: Mark Squillante

Matrix-Analytic Methods in Stochastic Models (MAM) conferences aim to bring together researchers working on the theoretical, algorithmic and methodological aspects of matrix-analytic methods in stochastic models and the applications of such mathematical research across a broad spectrum of fields, which includes computer science and engineering, telephony and communication networks, electrical and industrial engineering, operations research, management science, financial and risk analysis, bio-statistics, and evolution.

Keynote speakers: Søren Asmussen, Jevgenijs Ivanovs, Giang Nguyen, Zbigniew Palmowski and Phil Pollett.

IMS Sponsored meeting

Bernoulli/IMS 10th World Congress in Probability and Statistics

August 17–21, 2020. Seoul, South Korea

w TBC

Program chair is Siva Athreya and the Local chair is Hee-Seok Oh.

IMS co-sponsored meeting

20th INFORMS Applied Probability Society Conference

July 3–5, 2019. Brisbane, Australia

w http://informs-aps.smp.uq.edu.au/

The plenary speakers for the conference are: Charles Bordenave, Université de Toulouse, France (IMS Medallion Lecturer); Ton Dieker, Columbia University; Nelly Litvak, University of Twente and Eindhoven University of Technology, Netherlands; and Sidney Resnick, Cornell University (Marcel Neuts Lecturer).

A number of related events are being held before and after this conference: *Queues, Modelling, and Markov Chains: A Workshop Honouring Prof. Peter Taylor,* June 28–30 at Mount Tamborine, Queensland. *Applied² Probability*, July 2 at The University of Queensland, Brisbane *12th International Conference on Monte Carlo Methods and Applications (MCM2019)*, July 8–13 in Sydney, Australia.

At a glance: forthcoming IMS Annual Meeting and JSM dates

2019

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

2020

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

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

2021

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

2022

IMS Annual Meeting: TBC

JSM: Washington, **August 6–11, 2022**

2023

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

ENAR 2019 Spring Meeting in Philadelphia

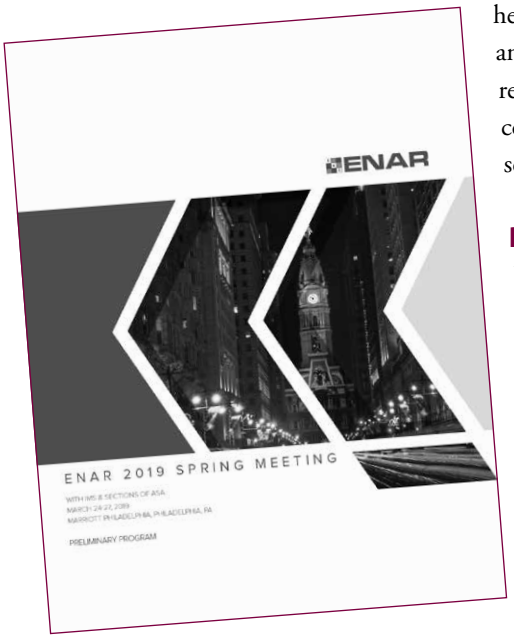
The 2019 ENAR Spring Meeting, with IMS and sections of ASA, will be held in Philadelphia, USA, during March 24–27, 2019. The four-day meeting will host students, researchers, and practitioners from all over the biostatistics profession, from academia to industry and government, from places large and small, brought together to share ideas, learn and connect over a joint interest in biometry. Philadelphia is home to Independence Hall, the Liberty Bell, National Constitution Center, Museum of the American Revolution, Philadelphia Museum of Art, and many more superb museums and attractions. There are lots of great restaurants in the area, plus the Reading Terminal Market across the street from the Philadelphia Marriott Downtown, for a quick bite.

Scientific Program

The diverse and exciting invited program sessions cover a wide range of topics, including statistical advances for microbiome data, electronic health records data, wearable/mobile technology, self-reported outcomes, non-ignorable missing data, data integration, causal inference, survival outcomes, spatial modeling, precision medicine, and clinical trials. The IMS Program Chair Vladimir Minin (University of California, Irvine) has put together complementary sessions on classification, variable selection, causal inference, statistical modeling in cell biology, microbiome data, surveillance data and mediation analysis for high-dimensional data.

Francesca Dominici to give ENAR Keynote Lecture

The 2019 ENAR Presidential Invited Address will be given by Dr. Francesca Dominici, the Clarence James Gamble Professor of Biostatistics, Population and Data Science at the Harvard T.H. Chan School of Public Health and Co-Director of the Harvard Data Science Initiative. Dr. Dominici is a statistician and data scientist whose pioneering scientific contributions have advanced public health research around the globe. Her life's work has focused broadly on developing and advancing methods for the analysis of large, heterogeneous data sets to identify and understand the health impacts of environmental threats and inform policy. In 2015, she was awarded the Florence Nightingale David award based on her contributions as a role model to women and her demonstrated excellence in statistical research, leadership of multidisciplinary collaborative groups, statistics education and service to the profession of statistics.



Preliminary Program now online

You can download a copy from the ENAR website at https://www.enar.org/meetings/spring2019/program/Preliminary_Program.pdf

Registration is open now (early bird deadline is February 1). See https://www.enar.org/meetings/spring2019/

ENAR PRESIDENTIAL ADDRESS: A Particulate Solution: Data Science in the Fight to Stop Air Pollution and Climate Change

Francesca Dominici

What if I told you I had evidence of a serious threat to American national security—a terrorist attack in which a jumbo jet will be hijacked and crashed every 12 days. Thousands will continue to die unless we act now. This is the question before us today—but the threat doesn't come from terrorists. The threat comes from climate change and air pollution.

We have developed an artificial neural network model that uses on-the-ground air-monitoring data and satellite-based measurements to estimate daily pollution levels across the continental US, breaking the country up into 1-square-kilometer zones. We have paired that information with health data contained in Medicare claims records from the last 12 years, and for 97% of the population ages 65 or older. We have developed statistical methods and computational efficient algorithms for the analysis over 460 million health records.

Our research shows that short and long term exposure to air pollution is killing thousands of senior citizens each year. This data science platform is telling us that federal limits on the nation's most widespread air pollutants are not stringent enough.

This type of data is the sign of a new era for the role of data science in public health, and also for the associated methodological challenges. For example, with enormous amounts of data, the threat of unmeasured confounding bias is amplified, and causality is even harder to assess with observational studies. These and other challenges will be discussed.

More IMS meetings around the world

IMS co-sponsored meeting NEW

Workshop: Emerging Data Science Methods for Complex Biomedical and Cyber Data
March 29–30, 2019
Augusta, GA, USA
w https://www.augusta.edu/mcg/dphs/workshop

The Division of Biostatistics and Data Science in the Department of Population Health Sciences in the Medical College of Georgia (MCG) at Augusta University (AU) is organizing this workshop focusing on elucidating emerging data science methods for modeling complex biomedical and cyber data. The goal of the proposed two-day workshop is to educate and empower graduate students, postdoctoral fellows, and early career researchers and faculty members with emerging statistical methods to address the complex data arising from various fields, in particular, from biosciences and cyber science.

IMS co-sponsored meeting NEW

The 7th Workshop on Biostatistics and Bioinformatics
May 10–12, 2019
Atlanta, GA, USA
w https://math.gsu.edu/yichuan/2019Workshop/

The keynote speaker is Dr. **Samuel Kou**, Professor of both Statistics and Biostatistics, the chair of Statistics Department at Harvard, and the recipient of the COPSS President's Award in 2012. There will be invited talks by distinguished researchers, and a poster session by young researchers and graduate students.

In order to encourage graduate students and young researchers to conduct a cutting-edge research, we will organize a poster session. The workshop will be providing **partial travel awards** to selected conference participants. Priority will be given to senior graduate students, post-graduate, recent PhD's, junior faculty, and under-represented groups. Check the website for application details of travel awards for young and minority researchers.

IMS co-sponsored meeting

12th International Conference on Bayesian Nonparametrics (BNP12)
June 24–28, 2019. Oxford, UK
w http://www.stats.ox.ac.uk/bnp12/

The Bayesian nonparametrics (BNP) conference is a bi-annual international meeting bringing together leading experts and talented young researchers working on applications and theory of nonparametric Bayesian statistics. Keynote speakers are Tamara Broderick (MIT), Long Nguyen (Michigan) and Aad van der Vaart (Leiden). Applications for travel support: **deadline December 15**.

Note that O'Bayes 2019 follows this meeting in Warwick, 70 miles away [see the announcement below]

IMS co-sponsored meeting NEW

O'Bayes 2019: Objective Bayes Methodology Conference
June 29–July 2, 2019
University of Warwick, UK
w https://warwick.ac.uk/fac/sci/statistics/staff/academic-research/robert/0bayesconference/

O'Bayes 2019 is dedicated to facilitate the exchange of recent research developments in objective Bayes theory, methodology and applications, and related topics, to provide opportunities for new researchers, and to establish new collaborations and partnerships. The meeting is the biennial meeting of the Objective Bayes section of the International Society for Bayesian Analysis (ISBA).

Note that O'Bayes 2019 is immediately after the BNP 2019 conference in Oxford [see announcement above], which takes place 24–28 June 2019, close enough in both travel time (45 minutes by direct train) and distance (70 miles) to benefit members of both the Objective Bayes and Bayesian non-parametric communities, who should consider joint attendance.

Registration is open now.

IMS co-sponsored meeting

XV CLAPEM: Latin American Congress of Probability and Mathematical Statistics
December 2–6, 2019
Mérida, Mexico
w http://clapem2019.eventos.cimat.mx/

The Congreso Latinoamericano de Probabilidad y Estadística Matemática (CLAPEM) is the official meeting of the Latin American Chapter of the Bernoulli Society. It is the major event in Probability and Statistics in the region and it gathers an important number of researchers and students, predominantly from Latin America. It serves as a forum to discuss and to disseminate recent advances in the field, as well as to reveal the future of our profession. Register for updates at the website above.

IMS co-sponsored meeting

Computer Age Statistics in the Era of Big and High-Dimensional Data
January 3–5, 2019. Pune, India

w https://www.iccas19pune.org/

Pre-conference workshops on January 02, 2019 sponsored by IISA and SAS, India.

The aim of the conference is to make the meet as a rendezvous of computer age statisticians, to explore their remarkable contributions and journey through new vistas of the twenty-first century Statistics. The interactions during this meet are expected to excel the creativity of the delegates and spur them to contribute remarkable and productive research outputs.

Topics include but are not limited to: computer age statistics, big and high dimensional data, statistical learning and data mining, biostatistics/bioinformatics, Bayesian inference, industrial statistics, spatial statistics and applications, financial statistics, astrostatistics.

IMS co-sponsored meeting NEW

2019 WNAR/IMS meeting
June 23–26, 2019
Portland, Oregon, USA

w http://www.wnar.org/event-3013994

The 2019 WNAR/IMS meeting will be in Portland, Oregon from June 23-26 hosted by Oregon Health & Science University (OHSU). Portland, Oregon's largest city, is known for eco-friendliness with high walkability, parks, bridges and bicycle paths. The scientific program features short courses, invited and contributed oral sessions, and student paper sessions. The local organizer is Byung Park (parkb@ohsu.edu), and the program chair is Meike Niederhausen (niederha@ohsu.edu).

IMS co-sponsored meeting

2019 Seminar on Stochastic Processes
March 13–16, 2019. University of Utah, Salt Lake City, USA

w http://www.math.utah.edu/SSP-2019/

The Seminar on Stochastic Processes 2019 (SSP2019) will feature the **Kai-Lai Chung lecture from Jean Bertoin** (Universität Zürich), and invited speakers: Dan Crisan (Imperial College London); Kay Kirkpatrick (University of Illinois at Urbana-Champaign); Sunder Sethuraman (University of Arizona); and Amandine Véber (École Polytechnique).

On March 13th, there will be two 90-minute tutorials by **Marek Biskup** (University of California, Los Angeles). More information on the content of the tutorials will be posted in early 2019.

There are no registration fees, but all participants, including invited speakers, are asked to register (the registration form is on the meeting website now).

IMS co-sponsored meeting

41st Conference on Stochastic Processes and their Applications (SPA)
July 8–12, 2019. Evanston, IL, USA

w http://sites.math.northwestern.edu/SPA2019/

The 41st Stochastic Processes and their Applications conference will take place July 8–12, 2019, in Evanston, USA. It will feature the following invited lectures. **Plenary Speakers:** Cécile Ané, Béatrice de Tilière, James R. Lee, Dmitry Panchenko, Yanxia Ren, Allan Sly, Caroline Uhler. **IMS Medallion Lectures:** Krzysztof Burdzy and Etienne Pardoux. **Lévy Lecture:** Massimilliano Gubinelli. **Doob Lecture:** Jeremy Quastel. **Schramm Lecture:** Stanislav Smirnov.

IMS co-sponsored meeting

ICIAM 2019: the 9th International Congress on Industrial and Applied Mathematics
July 15–19, 2019
Valencia, Spain

w https://iciam2019.org/index.php

The 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019) will be held in Valencia, Spain, from July 15–19, 2019. IMS is a member of ICIAM

Call for minisymposia: **deadline extended to December 10.** See https://www.iciam2019.com/index.php/scientific-program/minisymposia

IMS sponsored meetings

ENAR dates, 2019–2020
March 24–27, 2019: in Philadelphia, PA
March 22–25, 2020: in Nashville, TN

w http://www.enar.org/meetings/future.cfm

The 2019 ENAR/IMS meeting will be in Philadelphia (and the following year in Nashville.) Featuring a *Fostering Diversity in Biostatistics* workshop on March 24, on career and training opportunities within biostatistics, connecting underrepresented minority students interested in biostatistics with professional biostatisticians in academia, government and industry.

IMS co-sponsored meeting

The 7th International Workshop in Sequential Methodologies
June 18–21, 2019
Binghamton, USA

https://sites.google.com/view/iwsm2019

Hosted by the Department of Mathematical Sciences at Binghamton University, State University of New York (SUNY), USA.

Other meetings and events around the world

1st IMA Conference on
Knowledge Exchange in the Mathematical Sciences
December 3–4, 2018
Birmingham, UK
w https://ima.org.uk/10262/1st-ima-conference-on-knowledge-exchange-in-the-mathematical-sciences/

A meeting for all engaged in knowledge exchange of mathematics research to and from academia, industry, government and society. Following the publication of the Bond Review on Knowledge Exchange (KE) in the Mathematical Sciences (https://epsrc.ukri.org/newsevents/pubs/era-of-maths/) the IMA will arrange a conference on effective mechanisms for KE as well as career support for those seeking a career in mathematics knowledge KE. Who: knowledge exchange officers, research managers, academics staff, industry-university liaison officers etc., OR professionals, applied statisticians and anyone involved in facilitating the two-way exchange of research and innovation between universities, the private sector, government and third sector organisations.

ACEMS/MATRIX Conference on Functional Data Analysis
December 8–9, 2018
Melbourne, Australia
w https://acems.org.au/events/acemsmatrix-conference-functional-data-analysis

The University of Melbourne (Australia) will host a 2-day conference on Functional Data Analysis (FDA) on 8-9 December 2018. This scientific event aims at bringing together researchers to discuss recent developments dealing with all aspects around FDA (theory/methodology/applications). There is limited space for contributed talks.

Design and Statistical Analysis of Clinical Studies
January 7–11, 2019
Pala, India
w http://www.stcp.ac.in/admin/downloadcenter/admindownloaditem2189Brochure_Stati.pdf

The goal of this workshop is to provide a thorough review of statistical issues related to the design, management and statistical analysis of clinical studies. The discussions will focus on practical and modern methodological approaches relevant to such studies, and the concepts and statistical methods will be illustrated using examples motivated by real applications (such as diabetes and cancer). The workshop will be a combination of lectures and hands-on data analyses, and it will welcome open discussions and sharing of experiences and ideas.

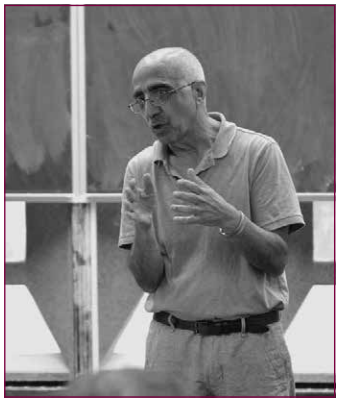
17th International Conference on Statistical Sciences
January 21–23, 2019
Lahore, Pakistan
w http://isoss.net/Brochure%2017th%20Conf.pdf

The aim of the Conference is to highlight the role of computer technology in statistical computations and analysis specially surveys and censuses through GIS and other information technology tools. The Conference will focus on theoretical and empirical aspects of the Official Statistics in modern technology.

8th International Conference on Risk Analysis and Design of Experiments
April 23–26, 2019
Vienna, Austria
w https://icr8.boku.ac.at/

Continuing in the spirit of the last seven meetings organized by the ISI Committee on Risk Analysis (ISI-CRA) of the International Statistical Institute (ISI) this year's conference focuses on Risk Analysis and Experimental Design. It is devoted to the Distinguished Professor **Samad Hedayat** (who is an IMS Fellow, among many honors), from the University of Illinois at Chicago, USA.

Registration is now open, and early registration is encouraged. Early registration deadline is **January 31st, 2019**.



Samad Hedayat lecturing in Fall 2011. Photo taken from "A Conversation with Samad Hedayat" in Statistical Science 2016, Vol. 31, No. 4, 637–647

2019 Women in Statistics and Data Science Conference
October 3–5, 2019
Bellevue, WA, USA
w https://ww2.amstat.org/meetings/wsds/2019

Organized by the American Statistical Association, this meeting will be held at the Hyatt Regency Bellevue on Seattle's Eastside.

The window for submission of concurrent, panel, and poster abstracts is March 1–April 18, 2019. Early registration opens May 31.

Sign up for the mailing list at the website above.

NIMBioS Tutorial: Network Modeling
February 4–6, 2019. Knoxville, TN, USA
w http://www.nimbios.org/tutorials/TT_networks
Application deadline: November 18, 2018.
This tutorial aims to introduce faculty, post-docs and graduate students to the topic of complex networks. The field has grown tremendously over the last 20 years and network science has found numerous applications to fields such as biology, ecology, social sciences, physical sciences, computer science, technology, and urban planning.

NIMBioS/DySoC Investigative Workshop: Mathematics of Gun Violence
May 1–3, 2019
Knoxville, TN, USA
w http://www.nimbios.org/workshops/WS_gunviolence
Application deadline: November 30, 2018.
This workshop will bring together researchers from diverse disciplinary backgrounds to (i) review the existing approaches on the mathematics and modeling of gun violence, (ii) identify and prioritize areas in the field that require further research, (iii) develop cross-disciplinary collaborations to gain new perspectives, and (iv) suggest research and data-collection that could assist evidence-based policy recommendations. A direct outcome from this workshop will be a comprehensive review of existing models on this topic with suggestions for further effort. It is expected that collaborations arising from the workshop will result in novel efforts to enhance the quantitative underpinnings of the science of gun violence.

NIMBioS Investigative Workshop: Scientific Collaboration Enabled by High Performance Computing
May 13–15, 2019
Knoxville, TN, USA
w http://www.nimbios.org/workshops/WS_hpc
Application deadline: February 5, 2019.
This 2 1/2 day workshop showcases important scientific research using big data and high performance computing and will feature new developments in high performance computing. A main goal is to facilitate new collaborations. The workshop will include several invited research talks, a poster session, breakout discussion sessions and a panel discussion. Applicants with research in a variety of scientific areas, ranging from biology to climate and to biomedical engineering, are encouraged to apply, including faculty, postdocs and advanced graduate students. Apply to present your work in our poster session!

NIMBioS Tutorial: The Search for Selection
June 3–7, 2019
Knoxville, TN, USA
w http://www.nimbios.org/tutorials/selection2
The tutorial was previously held in June 2018, and is back by popular demand! **Application deadline: February 1, 2019.**

Biologists are obsessed (indeed, seduced) by the search for signatures of selection in organismal features of interest, ranging from specific traits to genome-wide signatures. A vast number of approaches have been suggested in this search for selection, including genomic-based signatures of recent or ongoing selection, tests based on either excessive amounts or nonrandom patterns of divergence (in both fossil sequences and functional genomics data) and the more classical Lande-Arnold fitness estimates (direct association of phenotypic values with fitness estimates) and their modern extensions (such as aster models). Given the breadth of such searches, a large amount of machinery has been developed, but is rarely presented in a unified fashion. This tutorial presents an integrated overview of all these approaches, highlighting common themes and divergent assumptions.

NIMBioS Investigative Workshop: Transients in Biological Systems
May 29–31, 2019
Knoxville, TN, USA
w http://www.nimbios.org/workshops/WS_transients
Application Deadline: January 30, 2019.
Transients, or non-asymptotic dynamics, cover a wide range of possibilities, from biology to ecology and beyond. A full understanding of transients and their implications for biology requires mathematical and statistical developments as well as attention to biological detail. Transient dynamics have also played a central role in both empirical observations and in models in neuroscience. Yet interaction between ecologists and neuroscientists on this topic has been limited. Although epidemiology could be considered part of population biology, there is also less cross-talk between epidemiology and other areas of population biology than desirable. Transients clearly play a role in disease dynamics. Areas such as immune response require attention to transients as well.

More meetings and events around the world

3rd International Conference On Quantitative, Social, Biomedical & Economic Issues 2019 – ICQSBEI 2019
May 25–26, 2019
Athens, Greece
w https://icqsbei2019.weebly.com

You are invited to participate by submitting your abstract or poster, relevant to the topics of the Conference.

This conference serves as an excellent platform for presenting theoretical and applied papers in the fields of the uses of educational system for the development of new technologies (internet, social media, smart phones, technological addictions) for information, communication, entertainment, education ,business management, environmental management and marketing, as well as, the effects for people's health, from the addictive and uncontrollable uses and abuses of the new technologies.

Contact: Dr Christos Frangos, christos.frangos@gmail.com

International Conference on Control, Decision and Information Technologies (CoDIT'19)
April 23–26, 2019
Paris, France
w https://codit19.com

The 6th edition of International Conference on Control, Decision and Information Technologies (CoDIT'19), will be held from 23 to 26 April 2019 in Paris, France. Usually at this conference there are about 320 to 400 attendees.

We invite you to attend this conference, which provides opportunity for researchers to share together the latest developments in control, cybernetics, optimization, decision, computer science and information technologies.

Call for Papers: please see
https://codit19.com/Call_for_Papers_CoDIT2019.pdf

Around 18 special sessions from different countries worldwide are accepted. All CFP of proposed special/invited sessions are available here: https://codit19.com/index.php/special-sessions

Important dates and deadlines:
Papers submission deadline: December 5, 2018
Acceptance notification: February 8, 2019

Stochastic Spatial Models: an AMS Mathematics Research Communities summer conference
June 9–15, 2019
West Greenwich, RI, USA
w http://www.ams.org/programs/research-communities/2019MRC-Stochastic

This collaborative research conference is part of the AMS's Mathematics Research Communities (MRC) program, which provides opportunities for early-career mathematicians (two years pre-PhD to five years post-PhD) to engage in collaborative research on open problems, develop their professional networks, and benefit from the mentorship of leaders in the field. In contrast to typical week-long conferences, these meetings provide an intensive hands-on research experience.

Participants in this conference will work on open problems concerning (1) percolation of liquids through porous media, (2) two-type particle systems motivated by questions from physics and biology, and (3) processes on random graphs that arise, e.g., in modeling the spread of opinions, fads, and diseases on social networks.

Forty selected program participants receive support for travel, accommodations, and subsistence at the summer conference site, are eligible for support to travel to the 2020 Joint Mathematics Meetings in Denver Colorado (which includes Special Sessions on the MRC topics), and are eligible for follow-up collaboration travel support during the year following the summer conferences.

Applications are now being accepted, and they close on **February 15, 2019.**

39th International Symposium on Forecasting
June 16–19, 2019
Thessaloniki, Greece
w https://isf.forecasters.org/

The International Symposium on Forecasting (ISF) is the premier forecasting conference, attracting the world's leading forecasting researchers, practitioners, and students. Through a combination of keynote speaker presentations, academic sessions, workshops, and social programs, the ISF provides many excellent opportunities for networking, learning, and fun.

Important 2019 dates:
11 February – Travel grant applications due
15 February – Proposals for invited sessions
8 March – Abstract submission
19 April – Early registration deadline

Employment Opportunities around the world

Australia: Melbourne, Vic

University of Melbourne

Lecturer/Senior Lecturer in Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43934485

Canada: Mississauga, ON

Department of Mathematical & Computational Sciences, University of Toronto Mississauga

Assistant Professor (Teaching Stream) - Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43949236

Canada: Toronto, ON

York University

Tenure-track Professorial-stream

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44146102

Canada: Toronto, ON

University of Toronto

Assistant Professor, Teaching Stream - Statistical Collaboration

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44356493

Canada: Toronto, ON

University of Toronto

Assistant Professor, Statistical Genetics and Genomics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44356486

Canada: Toronto, ON

University of Toronto

Assistant Professor, Insurance Risk Management

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44356478

Canada: Toronto, ON

University of Toronto

Associate Professor, Statistical Information

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44556855

Canada: Toronto, ON

University of Toronto, Department of Statistical Sciences

Assistant Professor, Statistical Information

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44556850

Canada: Waterloo, ON

University of Waterloo, Department of Statistics & Actuarial Science

Tenure-track or tenured faculty positions in Statistics or Biostatistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44708616

Canada: Waterloo, ON

University of Waterloo

Tenure-track or Tenured position in Actuarial Science

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44708605

China: Shenzhen, Guangdong

The Chinese University of Hong Kong, Shenzhen

Tenured/tenure-track faculty positions

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43646674

France: Cergy Pontoise Cedex

ESSEC Business School

Assistant/Associate Professor in Operations Research

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44260803

Germany: Magdeburg

Otto-von-Guericke University, Magdeburg, Germany

Professorship in Statistics or Applied Probability

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44826273

Hong Kong: Kowloon

The Hong Kong University of Science and Technology, School of Business and Management

Non-tenure track teaching position in Statistics Spring 2019

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44141367

Netherlands: Enschede

University of Twente

Assistant Professor in Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44796064

Netherlands: Tilburg

Tilburg University, Econometrics & Operations Research

Two Assistant Professor Positions in Econometric Theory

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44495646

More Employment Opportunities

New Zealand: Auckland

The University of Auckland
Professional Teaching Fellow / Lecturer / Senior Lecturer / Associate Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44684835

New Zealand: Christchurch

University of Canterbury
Lecturer in Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44014517

Sweden: Stockholm

Royal Institute of Technology, Department of Mathematics
Assistant Professor in Geometry and Mathematical Stat in A.I.
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44146150

Sweden: Stockholm

Royal Institute of Technology, Department of Mathematics
Assistant Professor in Probability and Combinatorics in A.I.
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44146138

Taiwan: Taipei

Institute of Statistical Science, Academia Sinica
Tenure-Track Research Positions
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=42905013

U.A.E.: Dubai

Mohammed Bin Rashid University of Medicine and Health Sciences
Academic Ranks in Biostatistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43835357

United Kingdom: Cambridge

Department of Pure Mathematics and Mathematical Statistics, University of Cambridge
University Lecturer in Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44495724

United Kingdom: Glasgow

University of Glasgow
Lecturer / Senior Lecturer / Reader In Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44765765

United Kingdom: London

London School of Economics and Political Science
Assistant Professor in Data Science
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43800059

United States: Auburn University, AL

Auburn University, Department of Mathematics and Statistics
Assistant Professor - Data Science
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44496788

United States: Auburn University, AL

Auburn University, Department of Mathematics and Statistics
Assistant/Associate Professor - Biostatistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44638120

United States: Berkeley, CA

UC Berkeley
Capstone Lecturer
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43839624

United States: Berkeley, CA

University of California, Berkeley
Assistant Professor of Biostatistics/Data Science
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43965979

United States: Berkeley, CA

UC Berkeley
Assistant/Associate/Full Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44124562

United States: Berkeley, CA

UC Berkeley
Visiting Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44189747

United States: Berkeley, CA

UC Berkeley
Research Training Group Postdoctoral Scholar
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44281345

United States: Los Angeles, CA

University of California, Los Angeles

Faculty Positions 2019/20 - Department of Mathematics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43839363

United States: Santa Barbara, CA

University of California, Santa Barbara

Assistant Level Faculty Position - Statistics - Department of Statistics and Applied Probability

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44338075

United States: Santa Cruz, CA

University of California Santa Cruz

Statistics: Professor and Chair of Statistics Department (open until filled, initial review 1/07/19)

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44468896

United States: Stanford, CA

Stanford University

Associate or Full Professor in Statistics or Probability

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43561975

United States: Stanford, CA

Stanford University

Assistant Professor in Statistics or Probability

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43561952

United States: Fort Collins, CO

Colorado State University

Tenure-Track Faculty Position

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43888835

United States: New Haven, CT

Yale School of Public Health

Tenure-track Faculty Positions in Biostatistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43965917

United States: New Haven, CT

Yale School of Public Health

Tenure-track Faculty Positions in Biostatistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44455650

United States: New Haven, CT

Yale University: Faculty of Arts and Sciences: Social Sciences: Statistics and Data Science

Openings for Assistant, Associate, and Full Professor Positions

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44622932

United States: Storrs, CT

University of Connecticut

Assistant/Associate/Full Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44146765

United States: Storrs, CT

University of Connecticut, Storrs

Assistant/Associate Professor, Department of Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44534565

United States: Washington DC

American University, Department of Mathematics & Statistics

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43949634

United States: Newark, DE

The University of Delaware

Tenure Track Faculty Positions in Data Science, Assistant/Associate Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44013764

United States: Ames, IA

Iowa State University, Department of Statistics

Assistant Professor with Focus on Social Science

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44190050

United States: Ames, IA

Iowa State University, Department of Statistics

Assistant Professor in Forensic Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44190037

United States: Ames, IA

Iowa State University, Department of Statistics

Assistant Professor in Statistics with focus on Data Science

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44170569

United States: Lincoln, NE

UNIVERSITY OF NEBRASKA-LINCOLN

Institute of Agriculture and Natural Resources

DEPARTMENT OF STATISTICS

Five Tenure Track Positions in Statistics

The Statistics Department at the University of Nebraska-Lincoln is pleased to recruit candidates for five tenure-leading assistant professor positions. We are seeking candidates primarily in emerging or rapidly advancing branches of statistics who have demonstrated a high level of skill in methodology, data analysis, and computation.

The successful candidates will develop high-impact, nationally and internationally recognized research and teaching programs in the theory, methodology, and analysis appropriate to important contemporary data driven problems. The Department will support successful candidates to establish effective disciplinary and trans-disciplinary collaborations including integration with existing research groups; connect with stakeholders, agency, and/or industry partners; obtain and leverage external and internal support (grants, fee revenue, etc.) for research and teaching activities; mentor undergraduate and graduate students; publish in high-quality, high-impact peer-reviewed journals and participate in scientific meetings and other appropriate activities; and translate research-based information into learner-centered products.

The successful candidates will be expected to teach up to four regular courses per academic year with considerable reductions to encourage research and other professional productivity. In addition, the successful candidates will participate in program and curriculum development. The contract length is negotiable (nine month or twelve month) and may include an extension component.

Minimum qualifications: PhD in Statistics, applied mathematics, or closely related field. Experience with one or more data types in emerging or rapidly advancing fields within statistics, as demonstrated by refereed papers, presentations, or other completed projects, e.g., PhD thesis. Computing and methodological skills appropriate to the analysis and modeling of data types with which the candidate has experience.

Preferred qualifications: Demonstrated methodological novelty and creative ability in one or more area of statistics that are recently emerged or are currently rapidly advancing. This includes, but is not limited to, Bayesian statistics, temporal data, statistical image analysis, data science, and prediction using data mining and machine learning techniques. Experience collaborating (including data collection) with subject matter researchers in the general area of agricultural and natural resources. Sophisticated computational skills including data management, data sharing, algorithm design, and coding. Communication skills, written, verbal and otherwise, at a level sufficient to interact easily with a broad range of researchers at UNL, with the academic world more generally, and with the broader Nebraska agricultural and natural resources community.

To view details of the position and make application, go to http://employment.unl.edu, requisition F_180165. Applicants will be required to attach a letter of interest, curriculum vitae, contact information for three professional references, a one-page teaching statement, and a one-page statement of research interests as they apply to the subject matter areas of agricultural sciences and natural resources. The last two items should be combined and attached as Other Document. Review of applications begins December 15, 2018 and continues until the positions are filled or the search is closed.

As an EO/AA employer, qualified applicants are considered for employment without regard to race, color, ethnicity, national origin, sex, pregnancy, sexual orientation, gender identity, religion, disability, age, genetic information, veteran status, marital status, and/or political affiliation. See http://www.unl.edu/equity/notice-nondiscrimination.

More Employment Opportunities

United States: Champaign, IL

University of Illinois at Urbana-Champaign, Department of Statistics

Lecturer, Teaching, Clinical or Visiting Assistant, Associate and Full Professors

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=42685040

United States: Boston, MA

Boston University

Tenure Track Assistant Professor in Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43698173

United States: Cambridge, MA

Harvard University Department of Statistics

Full Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43865465

United States: Lowell, MA

University of Massachusetts Lowell

Assistant Professor of Mathematics-Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44765780

United States: Williamstown, MA

Williams College

Visiting Assistant Professor of Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43344339

United States: Worcester, MA

Worcester Polytechnic Institute

Tenure-Track Assistant Professor - Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43888434

United States: Detroit, MI

Wayne State University

Faculty

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44799251

United States: Duluth, MN

University of MN Duluth

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44684031

United States: Charlotte, NC

University of North Carolina at Charlotte

Chair, Department of Mathematics and Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44105718

United States: Durham, NC

Fuqua School of Business, Duke University

Tenure Track Faculty Position in Decision Sciences

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43179332

United States: Durham, NC

Duke University, Statistical Science

Open Rank Professor of the Practice

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=42550856

United States: Durham, NC

The Probability Community, Duke University

Tenure-Track Position

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43818352

United States: Glassboro, NJ

Rowan University

Assistant Professor, Full Time, Tenure-Track Mathematics: Statistics/Data Science/Computational Mathematics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44080177

United States: Princeton, NJ

Princeton University

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43865837

United States: Binghamton, NY

Binghamton University, Department of Mathematical Sciences

Assistant Professor in Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44146129

United States: Ithaca, NY

Cornell University

Tenured/Tenured-Track Faculty Position(s)

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43865447

More Employment Opportunities

United States: New York, NY

Faculty Position - Operations Research and Information Engineering (ORIE)

A faculty position in Operations Research and Information Engineering (ORIE) is available at the Cornell Tech campus in New York City. The position is part of the Jacobs Technion-Cornell Institute, and we particularly encourage candidates whose work fits into Jacobs Institute application-domain emphases in the areas of urban technology, especially related to the intersection of digital and physical systems, and digital health technologies.

The position is within Cornell University's School of ORIE, and applicants with research interests represented within Cornell ORIE are welcome at all levels, including tenured and tenured-track. The School consists of a diverse group of high-quality researchers and educators interested in probability, optimization, statistics, simulation, and a wide array of applications such as e-commerce, supply chains, scheduling, manufacturing, transportation systems, health care, financial engineering, service systems and network science. Cornell ORIE spans both the Ithaca and New York City campuses, but the successful candidate's teaching and research will be based in New York City. (Interested candidates can apply for a Cornell Tech in NYC position, a Cornell Ithaca ORIE position, or both, but the two campuses have different application sites; please see the Cornell Ithaca ad for the Ithaca application URL).

Candidates must hold a Ph.D. in operations research, mathematics, statistics, or a related field by the start of the appointment, and have demonstrated an ability to conduct outstanding research at the level of tenure-track or tenured faculty in Cornell ORIE. They must also have a strong commitment to engagement outside of academia in ways that foster significant commercial or societal impact, as aligned with the mission of the Cornell Tech campus. The Institute seeks candidates with demonstrated transdisciplinary interests and a track record of translational science. The successful candidate will be expected to pursue an active research program, to teach Master's and Ph.D.-level graduate courses, and to supervise graduate students.

All applications completed by November 16, 2018 will receive full consideration, but we urge candidates to submit all required material as soon as possible. We will accept applications until we fill the position. Applicants should submit a curriculum vitae, brief statements of research and teaching interests, and the names and contact information of at least three references. They should also identify one or two top publications to which they have made significant contributions. A distinguishing characteristic of research at Cornell Tech, in addition to world-class academic work, is that it engages deeply with external communities, organizations, K-12 education, and industry to address real-world problems and contexts that amplify the direct commercial and societal impact of our research. Accordingly, within a clearly identified subsection of the research statement, the candidate should address prior accomplishments and future plans related to this kind of direct commercial and/or societal impact of their research. Applications are on-line at

https://academicjobsonline.org/ajo/jobs/12018

Inquiries about your application may be directed to Sheri Minarski at **slm339@cornell.edu**.

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United States: Ithaca, NY

Cornell University, Department of Statistical Science

Faculty Position - All Ranks

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44170517

United States: Ithaca, NY

Cornell University

Faculty Position - Operations Research and Information Engineering (ORIE)

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44424971

United States: New York, NY

Department of Statistics, Columbia University

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Department of Statistics, Columbia University

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44274300

United States: New York City, NY

Department of Statistics, Columbia University

Lecturer in Discipline

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43965851

United States: New York City, NY

Department of Statistics, Columbia University

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43965810

United States: Philadelphia, PA

Wharton Department of Statistics, University of Pennsylvania

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Please visit our website, https://statistics.wharton.upenn.edu/recruiting/facultypositions, for a description of the department and a link to submit a CV and other relevant materials. Any questions can be sent to statistics.recruit@wharton.upenn.edu.

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United States: Philadelphia, PA

University of Pennsylvania School of Nursing

Associated Faculty – Research Track – Statistics / Director of BECCA

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United States: Philadelphia, PA

University of Pennsylvania, Wharton Department of Statistics

Assistant, Associate, or Full Professor of Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43949959

United States: Memphis, TN

The University of Memphis

Assistant Professor – Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44461700

United States: Denton, TX

University of North Texas

Tenure-Track Assistant Professor Department of Mathematics, Department of Biological Sciences

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United States: Houston, TX

Rice University

Teaching Professor Positions in Data Science

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44638154

United States: Salt Lake City, UT

University of Utah, College of Science

Assistant/Associate/Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43818944

United States: Salt Lake City, UT

University of Utah, Department of Mathematics

Assistant/Associate/Professor in Statistics and Mathematics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43509692

United States: Fairfax, VA

George Mason University, Statistics

Department Chair and Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44468062

United States: Norfolk, VA

Old Dominion University

Data Science and Computational Statistics - Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44534307

United States: Tacoma, WA

UW Tacoma School of Interdisciplinary Arts and Sciences

Assistant Professor in Statistics

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44654611

United States: Madison, WI

University of Wisconsin-Madison, Department of Statistics

Assistant Professor

http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43949962

International Calendar of Statistical Events

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

December 2018

NEW December 3–4: Birmingham, UK. **Knowledge Exchange in the Math. Sciences** w https://ima.org.uk/10262/1st-ima-conference-on-knowledge-exchange-in-the-mathematical-sciences/

December 3–5: Knoxville, USA. NIMBioS Tutorial: **Applications of Spatial Data: Ecological Niche Modeling** w http://www.nimbios.org/tutorials/TT_SpatialData2

NEW December 8–9: Melbourne, Australia. **Functional Data Analysis** w https://acems.org.au/events/acemsmatrix-conference-functional-data-analysis

December 10–11: London, UK. **Mathematical Challenges of Big Data** w https://ima.org.uk/9104/3rd-ima-conference-on-the-mathematical-challenges-of-big-data/

December 13–15: Hsinchu, Taiwan. **Joint Conference for Experimental Design and Production Engineering 2018** w http://www3.stat.sinica.edu.tw/jcedpe2018/

December 17-19: Houston, TX, USA. **Big Data and Information Analytics** w https://sph.uth.edu/divisions/biostatistics/bigdia/

December 17–20: Chennai, India. **Statistical methods in Finance 2018** w http://statfin.cmi.ac.in/2018/

December 17–20: Jerusalem, Israel. **Jerusalem Joint Statistical Event 2018** w https://www.emr2018.com/

December 27–30: Kolkata, India. **Triennial Calcutta Symposium on Probability and Statistics** w http://www.calcuttastatisticalassociation.org/sympBrochure.php

January 2019

IMS January 3–5: Pune, India. **Computer Age Statistics in the Era of Big and High-Dimensional Data** w https://www.iccas19pune.org/

NEW January 7–11: Pala, India. **Design and Statistical Analysis of Clinical Studies** w http://www.stcp.ac.in/admin/downloadcenter/admindownloaditem2189Brochure_Stati.pdf

January 18–19: Gainesville, FL, USA. **Statistics Winter Workshop 2019** w https://informatics.institute.ufl.edu/event/statistics-annual-winter-workshop-2019-recent-advances-in-causal-inference-and-mediation-analysis-and-their-applications/

January 21–23: Lunteren, The Netherlands. **18th Winter School on Mathematical Finance** w https://staff.fnwi.uva.nl/p.j.c.spreij/winterschool/winterschool.html

NEW January 21–23: Lahore, Pakistan. **17th International Conference on Statistical Sciences** w http://isoss.net/Brochure%2017th%20Conf.pdf

January 21–25: Bangkok, Thailand. **3rd Bangkok Workshop on Discrete Geometry, Dynamics and Statistics** w http://www.thaihep.phys.sc.chula.ac.th/BKK2019DSCR/

February 2019

February 11–15: Hawassa, Ethiopia. **Hawassa Stat & Math Conference 2019** w http://www.hu.edu.et/mathstatconf/

IMS February 13–15: Hobart, Tasmania, Australia. **Matrix-Analytic Methods for Stochastic Models (MAM10)** w http://www.maths.utas.edu.au/People/oreilly/mam/mam10.html

February 14–16: New Orleans, USA. **Conference on Statistical Practice** w https://ww2.amstat.org/meetings/csp/2019/

March 2019

March 6–8: Zanjan, Iran. **5th Conference on Contemporary Issues in Data Science (CiDaS)** w https://cidas.iasbs.ac.ir/

IMS March 13–16: Salt Lake City, USA. **2019 Seminar on Stochastic Processes** w http://www.math.utah.edu/SSP-2019/

IMS March 24–27: Philadelphia, PA, USA. **ENAR Spring Meeting** w http://www.enar.org/meetings/future.cfm

NEW IMS March 29–30: Augusta, GA, USA. **Emerging Data Science Methods for Complex Biomedical and Cyber Data** w https://www.augusta.edu/mcg/dphs/workshop

April 2019

NEW April 23–26: Paris, France. International Conference on Control, Decision and Information Technologies (CoDIT'19) w https://codit19.com

NEW April 23–26: Vienna, Austria. 8th International Conference on Risk Analysis and Design of Experiments w https://icr8.boku.ac.at/

April 25–26: Birmingham, UK. **2nd IMA and OR Society Mathematics of Operational Research w** https://ima.org.uk/9649/2nd-ima-and-or-society-conference-on-mathematics-of-operational-research/

May 2019

NEW May 1–3: Knoxville, TN, USA. **NIMBioS/DySoC Investigative Workshop: Mathematics of Gun Violence w** http://www.nimbios.org/workshops/WS_gunviolence

NEW ims May 10–12: Atlanta, GA, USA. **7th Workshop on Biostatistics and Bioinformatics w** https://math.gsu.edu/yichuan/2019Workshop/

NEW May 13–15: Knoxville, TN, USA. **NIMBioS Investigative Workshop: Scientific Collaboration Enabled by High Performance Computing w** http://www.nimbios.org/workshops/WS_hpc

NEW May 25–26: Athens, Greece. **3rd International Conference On Quantitative, Social, Biomedical & Economic Issues 2019 – ICQSBEI 2019 w** https://icqsbei2019.weebly.com

NEW May 29–31: Knoxville, TN, USA. **NIMBioS Investigative Workshop: Transients in Biological Systems w** http://www.nimbios.org/workshops/WS_transients

May 29–June 1: Bellevue, Washington DC, USA. **Symposium on Data Science and Statistics w** http://ww2.amstat.org/meetings/sdss/2019/

June 2019

NEW June 3–7: Knoxville, TN, USA. NIMBioS: **The Search for Selection w** http://www.nimbios.org/tutorials/selection2

NEW June 9–15: West Greenwich, RI, USA. **Stochastic Spatial Models**, AMS MRC summer conference **w** http://www.ams.org/programs/research-communities/2019MRC-Stochastic

June 12–14: Delft, The Netherlands. **DYNSTOCH 2019 w** http://web.math.ku.dk/~michael/dynstoch/

NEW June 16–19: Thessaloniki, Greece. **39th International Symposium on Forecasting w** https://isf.forecasters.org/

ims June 18–21: Binghamton, USA. **7th International Workshop on Sequential Methodologies (IWSM) w** http://sites.google.com/view/iwsm2019

June 18–21: Chania, Greece. **12th Chaotic Modeling & Simulation International Conference (CHAOS2019) w** http://www.cmsim.org/

June 19–21: Lima, Peru. **VI Congreso Bayesiano de América Latina / Bayesian Congress of Latin America (VI COBAL) w** https://sites.google.com/site/cobal2019/

June 19–22: Manizales, Colombia. **3rd International Congress on Actuarial Science and Quantitative Finance w** http://icasqf.org/

June 24–28: Oxford, UK. **12th International Conference on Bayesian Nonparametrics w** http://www.stats.ox.ac.uk/bnp12/

NEW ims June 23–26: Portland, OR, USA. **2019 WNAR/IMS meeting w** http://www.wnar.org/event-3013994

NEW ims June 29–July 2: Warwick, UK. **O'Bayes 2019:** Objective Bayes Methodology Conference **w** https://warwick.ac.uk/fac/sci/statistics/staff/academic-research/robert/0bayesconference/

July 2019

July 1–9: Zagreb, Croatia. **11th International Conference on Extreme Value Analysis w** http://web.math.hr/eva2019

UPDATED ims July 3–5 [**NOTE CORRECTED DATES**, not July 13–15 as previously listed]: Brisbane, Australia. **20th INFORMS Applied Probability Conference w** http://informs-aps.smp.uq.edu.au/

UPDATED ims July 6–10: Dalian, China. **2019 IMS-China Conference w [NEW WEBSITE]** http://www.ims-china.org

ims July 8–12: Evanston, IL, USA. **41st Conference on Stochastic Processes and their Applications (SPA) w** http://sites.math.northwestern.edu/SPA2019/

July 8–12: Guimarães, Portugal. **International Workshop on Statistical Modelling (IWSM2019) w** http://www.iwsm2019.org/

July 14–18: Leuven, Belgium. **40th Conference of the International Society for Clinical Biostatistics w** http://www.icsb.info

ims July 15–19: Valencia, Spain. **ICIAM 2019 w** https://iciam2019.org/index.php

July 22–26: Palermo, Italy. **European Meeting of Statisticians 2019 w** http://www.ems2019.palermo.it

July 23–25: Kuantan, Malaysia. **2nd International Conference on Applied & Industrial Mathematics and Statistics 2019 (ICoAIMS 2019) w** http://icoaims.ump.edu.my/index.php/en/

ims July 27–August 1: Denver, CO, USA. **IMS Annual Meeting at JSM 2019 w** http://ww2.amstat.org/meetings/jsm/2019/index.cfm

Continues on **page 30**

International Calendar *continued*

August 2019

August 17–19: St. Louis, USA. **4th Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI)** **w** https://www.math.wustl.edu/~kuffner/WHOA-PSI-4.html

August 18–23: Kuala Lumpur, Malaysia. **ISI2019: 62nd International Statistical Institute World Statistics Congress 2019** **w** http://www.isi2019.org/

October 2019

NEW October 3–5: Bellevue, WA, USA. **2019 Women in Statistics and Data Science Conference** **w** https://ww2.amstat.org/meetings/wsds/2019

October 10–12: Grand Rapids, USA. **3rd International Conference on Statistical Distributions and Applications (ICOSDA 2019)** **w** http://people.cst.cmich.edu/lee1c/icosda2019/

December 2019

ims December 2–6: Mérida, México. **XV CLAPEM: Latin American Congress of Probability and Mathematical Statistics** **w** http://clapem2019.eventos.cimat.mx/

March 2020

ims March 22–25: Nashville, TN, USA. **ENAR Spring Meeting** **w** http://www.enar.org/meetings/future.cfm

June 2020

June 15–18: New Orleans, LA, USA. **Sixth International Conference on Establishment Statistics (ICES-VI)** **w** http://ww2.amstat.org/meetings/ices/2020/

June 22–26: Sydney, Australia. **International Statistical Ecology Conference (ISEC2020)** **w** http://www.isec2020.org/

July 2020

July 5–11: Portoroz, Slovenia. **8th European Congress of Mathematics.** **w** http://www.8ecm.si/

August 2020

ims August 1–6: Philadelphia, PA, USA. **JSM 2020** **w** http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx

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

March 2021

ims March 14–17: Baltimore, MD, USA. **ENAR Spring Meeting** **w** http://www.enar.org/meetings/future.cfm

August 2021

ims August 7–12: Seattle, WA, USA. **IMS Annual Meeting at JSM 2021** **w** http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx

March 2022

ims March 27–30: Houston, TX, USA. **ENAR Spring Meeting** **w** http://www.enar.org/meetings/future.cfm

August 2022

ims July/August: Location TBC. **IMS Annual Meeting** **w** TBC

ims August 6–11: Washington DC, USA. **JSM 2022** **w** http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx

August 2023

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

August 2024

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

August 2025

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

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

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January/ February 2019

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December 1,
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