IMS Fellow Xihong Lin was among those elected as members of the National Academy of Medicine (NAM), one of the three United States Academies, along with Science and Engineering. Election to the Academy is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service.

Xihong Lin is the Henry Pickering Walcott Professor of Biostatistics, professor of statistics, and coordinating director of the Program in Quantitative Genomics at Harvard T.H. Chan School of Public Health. She was elected for her “contributions to statistics, genetics, epidemiology, and environmental health through influential and ingenious research in statistical methods and applications in whole-genome sequencing association studies, gene-environment, integrative analysis, and complex observational studies.”

“This distinguished and diverse class of new members is a truly remarkable set of scholars and leaders whose impressive work has advanced science, improved health, and made the world a better place for everyone,” said NAM President Victor J. Dzau. “Their expertise in science, medicine, health, and policy in the U.S. and around the globe will help our organization address today’s most pressing health challenges and inform the future of health and health care. It is my privilege to welcome these esteemed individuals to the National Academy of Medicine.”

New members are elected by current members through a process that recognizes individuals who have made major contributions to the advancement of the medical sciences, health care, and public health.

Also elected to NAM from the statistics community were the following people:

Francesca Dominici, Clarence James Gamble Professor of Biostatistics, Population, and Data Science at Harvard T.H. Chan School of Public Health, and co-director of the Harvard Data Science Initiative, for “developing and applying innovative statistical methods to understanding and reducing the impact of air pollution on population health.”

John P.A. Ioannidis, C.F. Rehnborg Professor in Disease Prevention, professor of medicine, health research and policy, biomedical data science, and statistics, and co-director of Meta-Research Innovation Center at Stanford University, for “his dedication to rigorous, reproducible, and transparent health science, for his seminal work on meta-research, for his calls for quality in evidence, and for the positive impact it has had on the reliability and utility of scientific information throughout the sciences.”

Bradley A. Malin, professor and vice chair, biomedical informatics, and professor of biostatistics and computer science, Vanderbilt University, for “contributions in natural language de-identification, guiding both national and international policies around research protection and enabling broad sharing and reuse of health and social data at an unprecedented scale.”
IMS Members’ News

2018 Mortimer Spiegelman Award

The Applied Public Health Statistics section of the American Public Health Association has named Raphael Gottardo, a computational biologist at Fred Hutchinson Cancer Research Center, the winner of its 2018 Mortimer Spiegelman Award. The Spiegelman Award honors statisticians under the age of 40 who have made outstanding contributions to health statistics, especially public health statistics.

“It is a privilege to be recognized by my peers and win such a well-respected award,” Gottardo said. “Researching ways to harness the immune system to prevent infections and cure cancer is a massive undertaking that involves analyzing and integrating a large amount of data, and I’m proud that my work is helping other scientists turn that trove of information into actionable insights.”

Gottardo’s work focuses on developing methods and tools to analyze large immunological data sets generated by novel assay technologies and helping scientists understand the results of their experiments.

“Dr. Gottardo has an outstanding ability to apply an integrated, reproducible and open approach to his research,” said Fred Hutch colleague and biostatistician Peter Gilbert. “I’ve had the pleasure of collaborating with Raphael on many HIV vaccine projects over the years and his fusion of computational immunology, computer science and statistical research is second to none.”

The Mortimer Spiegelman Award is named for demographer, actuary and biostatistician Mortimer Spiegelman and has been presented annually since 1970. See https://www.apha.org/apha-communities/member-sections/applied-public-health-statistics/who-we-are/awards

Nominate for 2019 COPSS Awards

Each year, the statistical profession recognizes outstanding members at the Joint Statistical Meetings in an awards ceremony organized by the Committee of Presidents of Statistical Societies (COPSS). Anyone can nominate—from the newest to most senior members of our societies. It is important to single out those who have made exceptional contributions to the profession. Please review the COPSS Awards for 2019, and see if you can identify worthy individuals.

Four COPSS awards will be presented at the 2019 JSM in Denver, Colorado, which will take place July 27–August 1, 2019. The deadlines for the Fisher Award and Lectureship and the Florence N. David Award and Lectureship have passed, but there is still time to nominate for the Presidents’ Award and the George W. Snedecor Award. Nominations for these awards should be submitted by January 15, 2019, to the relevant committee chair or to the COPSS Secretary.

For more information and contact details, please visit http://copss.org.
IMS Journals: new editors

Some of the IMS journals have new editors. Starting January 1, 2019, the Annals of Applied Probability will now have two Co-editors (like the Annals of Statistics has had). Therefore, Editor Bálint Tóth is handing over to François Delarue and Peter Friz. François is Professor in the mathematics department at the Université Nice–Sophia Antipolis in France; his website is at https://math.unice.fr/~delarue/. Peter Friz is Einstein Professor in Mathematics at TU-Berlin, and affiliated to the Weierstrass Institute for Applied Analysis and Stochastics, in Germany; his webpage is at http://page.math.tu-berlin.de/~friz/

At the Annals of Applied Statistics, Tilmann Gneiting hands over to Karen Kafadar as the Editor-in-Chief. Karen is Commonwealth Professor and Chair of the statistics department at the University of Virginia: http://statistics.as.virginia.edu/faculty-staff/profile/kk3ab

The Annals of Statistics Co-editors Ed George and Tailen Hsing are also ending their term. The new Co-Editors are Ming Yuan and Richard Samworth. Ming, who is also currently serving IMS as Program Secretary, is Professor of Statistics at Columbia University in New York: http://www.columbia.edu/~my2550/. Richard holds the Professorship of Statistical Science, and is Director of the Statistical Laboratory, at the University of Cambridge: http://www.statslab.cam.ac.uk/~rjs57/

As well as these new editors, Domenico Marinucci has agreed to serve for a second term as Editor of the Electronic Journal of Statistics, as recommended by the joint IMS/Bernoulli Society Committee to Select Editors. His term will be until the end of 2021. Domenico’s web page is http://www.mat.uniroma2.it/~marinucc/

Thank you to everyone who serves our community in this way!

American Association for the Advancement of Science selects new Fellows

The American Association for the Advancement of Science has bestowed upon 416 of its members the lifetime honor of being an elected Fellow in recognition of their extraordinary achievements in advancing science. Among those elected to the Section on Statistics are three IMS members: Song Xi Chen, Peking University, China; Edward L. Ionides, University of Michigan; and Sharon-Lise Normand, Harvard Medical School. The new AAAS Fellows will be recognized at the 2019 AAAS Annual Meeting in Washington DC. During a Fellows Forum on February 16, they will be presented with an official certificate and the AAAS Fellows’ gold and blue rosette pin, the colors of which represent the fields of science and engineering respectively.

CHILDCARE GRANTS

Are you bringing a child to the next IMS Annual Meeting (i.e. JSM in Denver, July 27 – August 1, 2019)? Apply to the IMS Child Care Initiative, and the IMS will reimburse 80% of the costs of privately arranged child care (for a dependent under 13), up to a maximum of US$250 per family. Priority will be given to those presenting papers or posters at the meeting.

https://www.imstat.org/meetings/ims-child-care-initiative/
Anirban’s Angle: US Elections, 2016, 2018, 2020

Anirban DasGupta writes: I thought it would be revealing and entertaining to look at the recently concluded US midterm election results and make some conclusions. Who is voting Republican? What is, really, the Republican base? And what about the Democrats? Are the bases entirely disjoint? Is the base more scattered for one of the parties compared to the other? Are the midterm voters of each party essentially the same as the voters who voted for them in the 2016 Presidential election? Or, are the two parties growing and capturing new voters? We will see...

We will also give a probability based on a stated model that the sitting US President would be reelected if elections are held now. First, the actual 2018 midterm data, which is presented in table 1 (right).

In view of these demographic voting percentages, by an elementary application of Bayes’ theorem, we can identify subgroups of the US population that can be called the bases of the two political parties. White men form 35% of the total population, but form 48% of the Republican vote. Evangelical Christians form 26% of the total population, and yet form 44% of the Republican vote. Gun owners also form 44% of the Republican vote, and about 20% of the Republican vote are rural voters.

In contrast, women form 52% of the total population, but form 61% of the Democratic vote. White women with a college degree and blacks each form 20% of the Democratic vote, millennials form 17%, Latinos 15%, black women alone 11%, LGBT voters 10%, and urban and suburban voters form a whopping 86% of the Democratic vote. The Democratic base seems to consist of a larger number of smaller subgroups than two or three large dominating groups. The Democratic base is more uniform. It is useful to present the bases in a tabular form (see table 2 below, and table 3 on the next page).

Table 1: Voting data for 2018 US midterm elections

<table>
<thead>
<tr>
<th>Group</th>
<th>Group size</th>
<th>Republican %</th>
<th>Democrat %</th>
</tr>
</thead>
<tbody>
<tr>
<td>All voters</td>
<td></td>
<td>44%</td>
<td>50.5%</td>
</tr>
<tr>
<td>All males</td>
<td>48%</td>
<td>51%</td>
<td>47%</td>
</tr>
<tr>
<td>All females</td>
<td>52%</td>
<td>40%</td>
<td>59%</td>
</tr>
<tr>
<td>White men</td>
<td>35%</td>
<td>60%</td>
<td>39%</td>
</tr>
<tr>
<td>White women</td>
<td>37%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>White men no college</td>
<td>20%</td>
<td>66%</td>
<td>32%</td>
</tr>
<tr>
<td>White men college</td>
<td>15%</td>
<td>51%</td>
<td>47%</td>
</tr>
<tr>
<td>White women no college</td>
<td>21%</td>
<td>56%</td>
<td>42%</td>
</tr>
<tr>
<td>White women college</td>
<td>16%</td>
<td>39%</td>
<td>60%</td>
</tr>
<tr>
<td>Nonwhites no college</td>
<td>18%</td>
<td>22%</td>
<td>76%</td>
</tr>
<tr>
<td>Nonwhites college</td>
<td>10%</td>
<td>22%</td>
<td>77%</td>
</tr>
<tr>
<td>All 18-29 age</td>
<td>13%</td>
<td>32%</td>
<td>67%</td>
</tr>
<tr>
<td>All 45-64</td>
<td>39%</td>
<td>50%</td>
<td>49%</td>
</tr>
<tr>
<td>All whites</td>
<td>72%</td>
<td>54%</td>
<td>44%</td>
</tr>
<tr>
<td>Blacks</td>
<td>11%</td>
<td>9%</td>
<td>90%</td>
</tr>
<tr>
<td>Latinos</td>
<td>11%</td>
<td>29%</td>
<td>69%</td>
</tr>
<tr>
<td>Asians</td>
<td>3%</td>
<td>23%</td>
<td>77%</td>
</tr>
<tr>
<td>Black men</td>
<td>5%</td>
<td>12%</td>
<td>88%</td>
</tr>
<tr>
<td>Black women</td>
<td>6%</td>
<td>7%</td>
<td>92%</td>
</tr>
<tr>
<td>Gun owners</td>
<td>46%</td>
<td>61%</td>
<td>36%</td>
</tr>
<tr>
<td>Non gun owners</td>
<td>53%</td>
<td>26%</td>
<td>72%</td>
</tr>
<tr>
<td>Protestants</td>
<td>25%</td>
<td>61%</td>
<td>38%</td>
</tr>
<tr>
<td>Catholics</td>
<td>26%</td>
<td>49%</td>
<td>50%</td>
</tr>
<tr>
<td>White evangelical</td>
<td>26%</td>
<td>75%</td>
<td>22%</td>
</tr>
<tr>
<td>Jewish</td>
<td>2%</td>
<td>17%</td>
<td>79%</td>
</tr>
<tr>
<td>Married</td>
<td>59%</td>
<td>47%</td>
<td>51%</td>
</tr>
<tr>
<td>Unmarried</td>
<td>41%</td>
<td>37%</td>
<td>61%</td>
</tr>
<tr>
<td>Independents</td>
<td>30%</td>
<td>42%</td>
<td>54%</td>
</tr>
<tr>
<td>Trump strongly like</td>
<td>31%</td>
<td>94%</td>
<td>5%</td>
</tr>
<tr>
<td>Trump like some</td>
<td>14%</td>
<td>74%</td>
<td>24%</td>
</tr>
<tr>
<td>Trump dislike some</td>
<td>8%</td>
<td>34%</td>
<td>63%</td>
</tr>
<tr>
<td>Trump strongly dislike</td>
<td>46%</td>
<td>4%</td>
<td>95%</td>
</tr>
<tr>
<td>Health care main issue</td>
<td>41%</td>
<td>23%</td>
<td>75%</td>
</tr>
<tr>
<td>Immigration main</td>
<td>23%</td>
<td>75%</td>
<td>23%</td>
</tr>
<tr>
<td>Economy main</td>
<td>22%</td>
<td>63%</td>
<td>34%</td>
</tr>
<tr>
<td>LGBT</td>
<td>6%</td>
<td>17%</td>
<td>82%</td>
</tr>
<tr>
<td>Urban</td>
<td>32%</td>
<td>32%</td>
<td>65%</td>
</tr>
<tr>
<td>Suburban</td>
<td>51%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>Rural</td>
<td>17%</td>
<td>57%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Table 2: Republican base, data for 2018 US midterm elections

<table>
<thead>
<tr>
<th>Republican Base</th>
<th>% of population</th>
<th>% of Rep. vote</th>
</tr>
</thead>
<tbody>
<tr>
<td>White men</td>
<td>35%</td>
<td>48%</td>
</tr>
<tr>
<td>White men no college</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>Evangelicals</td>
<td>26%</td>
<td>44%</td>
</tr>
<tr>
<td>Gun owners</td>
<td>46%</td>
<td>44%</td>
</tr>
<tr>
<td>Rural voters</td>
<td>17%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Table 3: Democrat base, data for 2018 US midterm elections

<table>
<thead>
<tr>
<th>Democratic Base</th>
<th>% of population</th>
<th>% of Dem. vote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>52%</td>
<td>61%</td>
</tr>
<tr>
<td>Women with college degree</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>Blacks</td>
<td>11%</td>
<td>20%</td>
</tr>
<tr>
<td>Millennials</td>
<td>7%</td>
<td>17%</td>
</tr>
<tr>
<td>Latinos</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>Black women</td>
<td>6%</td>
<td>11%</td>
</tr>
<tr>
<td>LGBT voters</td>
<td>6%</td>
<td>10%</td>
</tr>
</tbody>
</table>

We can also deduce from the midterm results and Bayes’ theorem that 83% of the Republican voters in the midterm are those that voted for the Republican nominee in the 2016 Presidential election; and 80% of the Democratic voters in the midterm are those that voted for the Democratic nominee in the 2016 Presidential election. Both parties have attracted some new voters. Political activity in the coming months will no doubt see the two parties protect and defend interests of their respective bases.

It is always a seductive idea to try to predict the future, especially for a loaded question such as, “Will the sitting US President be re-elected?” We give some sort of a probability for it based on a set of assumptions, which are that:

(a) The probability is for re-election if elections are held now.

(b) It is assumed that whether or not the sitting President wins the electoral college votes in a given state is determined by his approval rating in that state.

(c) If the approval rating is 50% or more, it is assumed that he is guaranteed to win that state, and if the approval rating is 45% or less, it is assumed that he will lose that state. If the approval rating, say \( \alpha \), is between 0.45 and 0.5, we model the probability that he will win that state as \( 20 \times (\alpha - 0.45) \).

(d) Based on the approval ratings in each state at the 2018 midterm elections, there are then only four states that are in play: Arizona, Nevada, North Carolina, and Wisconsin. The sitting Presidents’ winning probability in these states are respectively 0.75, 0.5, 0.75, 0.5, using the formula in (c). These states carry 11, 6, 15, 10 electoral college votes, respectively. So, plainly, the probability of carrying all four states is at most 0.5

(e) If we let \( \mu \) denote the expected number of electoral colleges the sitting President will win from these four states, then, by using the obvious indicator variables, \( \mu = 27.5 \).

(f) Of the 306 electoral colleges that the sitting President won in the 2016 election, he is assured to win in 228 at this point of time, and he is assured to lose in 42 of them (PA approval 45, MI approval 44, IA approval 43). Thus, to still win an electoral college majority of at least 270 electoral colleges, he must carry all four states in play listed above.

New History of Statistics group

Michael P. Cohen, American Institutes for Research, is a founding member of a new group, and he would like you to join him:

The American Statistical Association (ASA) has a brand new History of Statistics Interest Group (HoSIG). Membership in ASA is not required to join. Anyone interested in the history of statistics is welcome and encouraged to become a member.

The objectives of HoSIG are to:

1. Bring together individuals and groups who have an active interest in the history of statistics.
2. Promote and support research into the history of statistics at all levels.
3. Further the use of the history of statistics in education.
4. Encourage the historical perspective among statisticians and related professionals.
5. Contribute to the program of the annual Joint Statistical Meetings and selected meetings of the ASA and other professional organizations.

Please let me know if you have any questions: email mpcohen@juno.com. You will find instructions about how to join at this link: http://community.amstat.org/historyofstats/aboutus/join
OBITUARY: Frank Hampel

1941–2018

Frank Rudolf Hampel, professor emeritus at ETH Zurich, passed away in Thalwil near Zurich, Switzerland, on October 2, at the age of 77.

Frank Hampel was well known for his fundamental contributions to robust statistics, in particular for the introduction of the basic concepts of influence function and breakdown point. The influence function—“perhaps the most useful heuristic tool of robust statistics,” according to Peter Huber (Robust Statistics, Wiley 1981, pp.13–14)—describes the approximate effect on an estimate when inserting, deleting or modifying a single observation. Moreover, the asymptotic variance of an estimator is given by the expected value of the squared influence function. This connection allowed Frank to formulate and solve a central optimality problem in robust statistics, namely to minimize the asymptotic variance under a bound on the influence of a single observation (“Lemma 5” in his thesis). In contrast to the infinitesimal description provided by the influence function, the breakdown point is a global measure that gives the largest percentage of arbitrary bad observations an estimator can tolerate without diverging. His book Robust statistics: The approach based on the influence function, written together with Elvezio Ronchetti, Peter Rousseeuw and Werner Stahel (Wiley, 1986), contains a systematic exposition of the area. It served as a key reference for more than two decades and was highly influential.

In addition to deviations from an assumed marginal distribution, Frank also considered deviations from independence, advocating the use of long-range dependence models as the most relevant type of unsuspected dependence. Another important contribution by Frank is what he called “small sample asymptotics”, a variant of saddle-point approximations for the distribution of estimators, based on a different derivation. They provide an excellent agreement with the exact distribution even for very small samples.

In his later years, Frank focused on the philosophical foundations of statistics. He argued for describing epistemic uncertainty by upper and lower probabilities, corresponding to one-sided bets. In his approach, total ignorance about an event means that one refuses to bet on either the event or its complement. It remains to be seen if these ideas will be recognized in the future as a fundamental new approach.

Frank grew up in Germany during World War II; his father died when he was one year old. His mother then moved to the house of his grandfather in Upper Silesia. Because this region became Polish at the end of the war, the family was forced to leave and ended up near Göttingen.

After high school, Frank studied physics, mathematics and philosophy in Munich and Göttingen. His professor in Göttingen, Konrad Jacobs, who worked in ergodic theory, showed him the seminal 1964 Annals of Mathematical Statistics paper by Peter Huber, and encouraged him to go to Berkeley with a one-year exchange scholarship. He decided to stay there and completed his PhD in 1968. Officially, Erich Lehmann was his advisor, but Erich wrote in Reminiscences of a Statistician (Springer, 2008, p.158) that “...in fact I had essentially no input. My ‘contribution’ consisted of my immediate realization of the importance and maturity of this work ... and my task was to encourage, smooth the process and otherwise stay out of the way.” After his PhD, Frank accepted an offer by Volker Strassen (famous for proving an invariance principle for the law of the iterated logarithm) to move with him from Berkeley to the University of Zurich and to take a position as “Oberassistent”, being in charge of the statistical consulting service. In 1970–71, Frank was invited together with Peter Bickel and Peter Huber to join John Tukey during the “Princeton robustness year”, which had a big impact on the further development of robust statistics.

In 1974, he was elected as associate professor at ETH Zurich, thus becoming a colleague of Peter Huber. He was soon promoted to full professor and stayed at ETH until his retirement in 2006. In 2007 he received an honorary doctorate from the University of Dortmund for his “scientific achievements in the area of modern statistics and data analysis.”

Besides statistics, Frank had a keen interest in, and profound knowledge of, nature, in particular astronomy, birds, orchids and dragonflies. No road was too far and no search too laborious if he could find and observe a species he had never seen before. He was very happy and patient to share his knowledge and enthusiasm with others. Frank was an independent thinker who had a great influence on many statisticians with his original ideas, and at the same time was a very kind person. He is survived by his wife, Verena.

Hans R. Künsch, ETH Zurich
Recent papers: *Electronic Journal of Probability*

The *Electronic Journal of Probability (EJP)* publishes full-length research articles in probability theory. Short papers should be submitted first to its sister journal, *Electronic Communications in Probability (ECP).* *EJP* and *ECP* share the same editorial board, but with different Editors in Chief. *EJP* and *ECP* are open access official journals of IMS and the Bernoulli Society. Donations to the IMS Open Access Fund help to keep the journal free: [https://www.imstat.org/shop/donation/](https://www.imstat.org/shop/donation/). Read it at [https://projecteuclid.org/euclid.ejp](https://projecteuclid.org/euclid.ejp)

**Volume 23: 2018 (to mid-December)**

- On the critical probability in percolation
  - SVAANTE JANSON and LUTZ WARNKE; PAPER 1, 25pp.
- Fluctuations of the empirical measure of freezing Markov chains
  - FLORIAN BOUGET and BERTRAND CLOZE; PAPER 2, 31pp.
- On the strange domain of attraction to generalized Dickman distributions for sums of independent random variables
  - ROSS G PINSKY; PAPER 3, 17pp.
- Stein approximation for functionals of independent random sequences
  - NICOLAS PRIVAULT and GRZEGORZ SERAFIN; PAPER 4, 34pp.
- Scaling limits for some random trees constructed inhomogeneously
  - NATHAN ROSS and YUTING WEN; PAPER 5, 35pp.
- Pinning of a renewal on a quenched renewal
  - KENNETH S. ALEXANDER and QUENTIN BERGER; PAPER 6, 48pp.
- Mesoscopic fluctuations for unitary invariant ensembles
  - GAULTIER LAMBERT; PAPER 7, 33pp.
- Martingales associated to peacocks using the curtain coupling
  - NICOLAS JULIET; PAPER 8, 29pp.
- Approximation of smooth convex bodies by random polytopes
  - JULIAN GROTE and ELISABETH WERNER; PAPER 9, 21pp.
- Spectral analysis of stable processes on the positive half-line
  - ALEKSEI KUIZNETSOV and MATJULIS KWAŚNICKI; PAPER 10, 29pp.
- Yaglom limit for stable processes in cones
  - KRZYSZTOF BOGDAN, ZBIGNIEW PALMOWSKI, and LONGMIN WANG; PAPER 11, 19pp.
- Ensemble equivalence for dense graphs
- On martingale problems and Feller processes
  - FRANZISKA KÜHN; PAPER 13, 18pp.
- Temporal asymptotics for fractional parabolic Anderson model
  - XIA CHEN, YAOZHONG HU, JIAN SONG, and XIAOMING SONG; PAPER 14, 39pp.
- Universality in Random Moment Problems
  - HOLGER DETTE, DOMINIK TOMECKI, and MARTIN VENKER; PAPER 15, 23pp.
- Noise stability and correlation with half spaces
  - ELCHANAN MOSSEL and JOE NEEMAN; PAPER 16, 17pp.
- Frogs on trees?
  - JONATHAN HERMON; PAPER 17, 40pp.
- Contiguity and non-reconstruction results for planted partition models: the dense case
  - DEBAPRATIM BASUJEE; PAPER 18, 28pp.
- Point-shift foliation of a point process
  - FRANCOIS BACCIELLI and MIR-OHDIM JAHJIRAIRCED; PAPER 19, 25pp.
- Evolution systems of measures and semigroup properties on evolving manifolds
  - LI-JUAN CHENG and ANTON THALMAIER; PAPER 20, 27pp.
- Path-space moderate deviation principles for the random field Curie–Weiss model
  - FRANCESCA COLLET and RICHARD C. KIRAU; PAPER 21, 45pp.
- Existence and space-time regularity for stochastic heat equations on p.c.f. fractals
  - BEN HAMBLY and WEIYE YANG; PAPER 22, 30pp.
- Williams decomposition for superprocesses
  - YAN-XIA REN, RENMING SONG, and RUI ZHANG; PAPER 23, 33pp.
- Coupling polynomial Stratonovich integrals: the two-dimensional Brownian case
  - SAYAN BANERJEE and WILFRID KENDALL; PAPER 24, 43pp.
- On sensitivity of mixing times and cutoff
  - JONATHAN HERMON and YUVAL PERES; PAPER 25, 34pp.
- A random walk on the symmetric group generated by random involutions
  - MEGAN BERNSTEIN; PAPER 26, 28pp.
- Recurrence and transience of contractive autoregressive processes and related Markov chains
- The Schrödinger equation with spatial white noise potential
  - ARNAUD DEBUSSCHE and HENDRICK WEBER; PAPER 28, 16pp.
- Affine processes with compact state space
  - PAUL KRÜHNER and MARTIN LARSSON; PAPER 29, 23pp.
- Localization of directed polymers with general reference walk
  - ERIK BATES; PAPER 30, 45pp.
- Critical Gaussian chaos: convergence and uniqueness in the derivative normalisation
  - ELLEN POWELL; PAPER 31, 26pp.
- Exponential concentration of cover times
  - ALEX ZHAI; PAPER 32, 22pp.
- Circular law for the sum of random permutation matrices
  - ANIRBAN BASAK, NICHOLAS COOK, and OFER ZEITOUNI; PAPER 33, 51pp.
- Moment convergence of balanced Pólya processes
  - SVANTE JANSON and NICHOLAS POULIANNE; PAPER 34, 13pp.
- Decomposition of mean-field Gibbs distributions into product measures
  - ROEN GELDAN and RENAN GROSS; PAPER 35, 24pp.
- Fourth moment theorems on the Poisson space in any dimension
  - CHRISTIAN DÖBLER, ANNA VIDOTTO, and GUANQIU ZHENG; PAPER 36, 27pp.
- Sublinearity of the number of semi-infinite branches for geometric random trees
  - DAVID COUPIER; PAPER 37, 33pp.
- Characterizing stationary 1+1 dimensional lattice polymer models
  - HANS CHAUMONT and CHRISTIAN NOACK; PAPER 38, 19pp.
- Vertex reinforced non-backtracking random walks: an example of path formation
  - LINE C. LE GOFF and OLIVIER RAIMOND; PAPER 39, 38pp.

Extremes of local times for simple random walks on symmetric trees ....................................................... YOSHIHIRO ABE; PAPER 40, 41pp.
Excited random walk in a Markovian environment ......................................................................................... NICHOLAS F. TRAVERS; PAPER 43, 60pp.
Quantitative estimates for the flux of TASEP with dilute site disorder ............................................................ C. BAHADORAN AND T. BODINEAU; PAPER 44, 44pp.
Convergence in distribution norms in the CLT for non identical distributed random variables .................. VLAD BALLY, LUCIA CARAMELLINO, AND GUILLAUME POLY; PAPER 45, 51pp.
Invariant measures, Hausdorff dimension and dimension drop of some harmonic measures on Galton–Watson trees ........................................................................................................ PIETER ROSSUSSEN; PAPER 46, 31pp.
Necessary and sufficient conditions for consistent root reconstruction in Markov models on trees ........ WAI-TONG (LOUIS) FAN AND SEBASTIEN ROCH; PAPER 47, 24pp.
Hole probabilities for β-ensembles and determinantal point processes in the complex plane .................. KARTICK ADHIKARI; PAPER 48, 21pp.
Coalescent results for diploid exchangeable population models ................................................................. MATTHIAS BIRKNER, HU LIU, AND ANJA STURM; PAPER 49, 49pp.
Resistance growth of branching random networks ...................................................................................... DAYUE CHEN, YUEYUN HU, AND SHEN LIN; PAPER 52, 17pp.
Intrinsic isoperimetry of the giant component of supercritical bond percolation in dimension two .................. JULIAN GOLD; PAPER 53, 41pp.
Uniform infinite half-planar quadrangulations with skewness ........................................................................... ERICH BAUR AND LOIC RICHIER; PAPER 54, 43pp.
A support and density theorem for Markovian rough paths ............................................................................. ILYA CHEVREY AND MARCEL OGDONINK; PAPER 56, 16pp.
The effect of boundary conditions on mixing of 2D Potts models at discontinuous phase transitions ........ REZA GHESSARI AND EYAL LUBETZKY; PAPER 57, 30pp.
Sample path properties of permanental processes .................................................................................. MICHAEL B. MARCUS AND JAY ROSEN; PAPER 58, 47pp.
Dynamical freezing in a spin glass system with logarithmic correlations .................................................... ASER CORTINES, JULIAN GOLD, AND OREN LOUIDOR; PAPER 59, 31pp.
The argmin process of random walks, Brownian motion and Lévy processes .............................................. JIM PITMAN AND WENPIN TANG; PAPER 60, 35pp.
Two-valued local sets of the 2D continuum Gaussian free field: connectivity, labels, and induced metrics ...................................................................................... JUHAN ARU AND AVELIO SEPÚLVEDA; PAPER 61, 35pp.
The phase transitions of the random-cluster and Potts models on slabs with η ≥ 1 are sharp ....................... IOAN MANOLESCU AND ARAN RAOUFI; PAPER 63, 25pp.
Estimates of Dirichlet heat kernels for subordinate Brownian motions ......................................................... PANKI KIM AND ANI MIMICA; PAPER 64, 45pp.
Particle representations for stochastic partial differential equations with boundary conditions .................. DAN CRISAN, CHRISTOPHER JANJUCA, AND THOMAS G. KURTZ; PAPER 65, 29pp.
Chordal SLE探索者 of a quantum disk ............................................................................................................... EWAIN GWYNE AND JASON MILLER; PAPER 66, 24pp.
Localisation of the principal Dirichlet eigenvector in the heavy-tailed random conductance model .............. FRANZISKA FLEGEL; PAPER 68, 43pp.
Matrix normalised stochastic compactness for a Lévy process at zero .......................................................... ROSS A. MALLER AND DAVID M. MASON; PAPER 69, 37pp.
The phase transition in the ultrametric ensemble and local stability of Dyson Brownian motion ................ PER VON SOOSTEN AND SIMONE WARZEL; PAPER 70, 24pp.
The polymorphic evolution sequence for populations with phenotypic plasticity .................................... MARTINA BAAR AND ANTON BOVIER; PAPER 72, 27pp.
Cutoff for lamplighter chains on fractals ......................................................................................................... AMIR DEMBO, TAKASHI KUMAGAI, AND CHIKARA NAMJURA; PAPER 73, 21pp.
Bernstein–gamma functions and exponential functionals of Lévy processes .................................................. PIERRE PATE AND MILADEN SAVOV; PAPER 75, 101pp.
GOE statistics for Anderson models on antitrees and thin boxes in Z^2 with deformed Laplacian ............... CHRISTIAN Sadel; PAPER 76, 24pp.
Traffic distributions of random band matrices .............................................................................................. BENSON AU; PAPER 77, 48pp.
Dirichlet form associated with the φ^2 model .................................................................................................. RONGCHAN ZHU AND XIANGCHAN ZHU; PAPER 78, 31pp.
A q-deformation of the symplectic Schur functions and the Berele insertion algorithm ............................. IOANNA NTEKA; PAPER 79, 23pp.
Spin systems from loop soups ....................................................................................................................... TIM VAN DE BRUG, FREDERICO CAMIA, AND MARCON LEE; PAPER 81, 17pp.
Uniqueness for the 3-state antiferromagnetic Potts model on the tree ....................................................... ANDREAS GALANIS, LESLIE ANN GOLDBERG, AND KIYAN YANG; PAPER 82, 43pp.
The dimension of the range of a transient random walk .......................................................................... NIKOS GEORGIDOU, DAYAR KHOSHEVIN, KUNWOO KIM, AND ALEX D. RAMOS; PAPER 83, 31pp.
Existence and uniqueness of reflecting diffusions in cups ............................................................................ CRISTINA COSTANTINI AND THOMAS G. KURTZ; PAPER 84, 21pp.
The random matrix hard edge: rare events and a transition ......................................................................... DIANE HOLCOMB; PAPER 85, 20pp.
On the speed of once-reinforced biased random walk on trees ................................. ANDREA COLLEVECCHIO, MARK HOLMES, AND DANIEL KIOUS; PAPER 86, 32pp.
Cost functionals for large (uniform and simply generated) random trees ......................... JEAN-FRANÇOIS DELMAS, JEAN-STÉPHANE DHERSIN, AND MARION SCALVEAU; PAPER 87, 36pp.
Recurrence and transience of frogs with drift on $\mathbb{Z}^d$ ........................................... CHRISTIAN DÖBLER, NINA GANTERT, THOMAS HÖFELSÄUER, SERGEI POPOV, AND FELIZITAS WEIDNER; PAPER 88, 23pp.
The incipient infinite cluster of the uniform infinite half-planar triangulation ................. LOÏC RICHIER; PAPER 89, 38pp.
Collisions of several walkers in recurrent random environments ................................ ALEXIS DEVULDER, NINA GANTERT, AND FRANÇOISE PÈNE; PAPER 90, 34pp.
On the stability and the concentration of extended Kalman-Bucy filters .................... PIERRE DEL MORAL, ALINE KURTZMANN, AND JULIAN TUGAUT; PAPER 91, 30pp.
Berry–Esseen bounds for typical weighted sums ......................................................... S G BOBKOV, G P CHISTYAKOV, AND F GÖTZE; PAPER 92, 22pp.
Weighted dependency graphs ......................................................................................... VALENTIN FÉRAY; PAPER 93, 65pp.
Metastable Markov chains: from the convergence of the trace to the convergence of the finite-dimensional distributions ................................................................. CLAUDIO LANDIM, MICHAIL LOULAKIS, AND MUSTAPHA MOURRAGUI; PAPER 95, 34pp.
Universality for the random-cluster model on isoradial graphs ..................................... HUGO DUMINIL-COPIN, JIHYEUNG JI, AND IOAN MANOLESCU; PAPER 96, 70pp.
Asymptotic behavior of the Brownian frog model ......................................................... ERIN BECKMAN, EMILY DINAN, RICK DURRETT, RAN HUO, AND MATTHEW JUNGE; PAPER 97, 19pp.
Disconnection by level sets of the discrete Gaussian free field and entropic repulsion ................................................................. MAXIMILIAN NITZSCHNER; PAPER 98, 21pp.
A family of random sup-measures with long-range dependence ..................................... JULIAN TUGAUT, RICHARD BROWNSMITH, AND SHI-CHI CHANG; PAPER 100, 31pp.
Renormalization of local times of super-Brownian motion ............................................. JIELIANG HONG; PAPER 102, 19pp.
Powers of Ginibre eigenvalues ...................................................................................... MARCO ROMITO; PAPER 104, 14pp.
Large deviations for small noise diffusions in a fast markovian environment .................... AMARJIT BUDHIRAJA, PAUL DUPUIS, AND ARNAUD GANGULY; PAPER 105, 32pp.
A simple method for the existence of a density for stochastic evolutions with rough coefficients ................................................................. MARCO ROMITO; PAPER 106, 43pp.
Precise large deviations for random walk in random environment .................................. DARIUSZ BURACZEWSKI AND PIOTR DYSEWICZ; PAPER 107, 26pp.
Refined asymptotics for the composition of cyclic urns .................................................. NOELA MÜLLER AND RALPH NEININGER; PAPER 110, 20pp.
Monotonous subsequences and the descent process of invariant random permutations ................... MOHAMED Slim KAMMOUN; PAPER 111, 31pp.

Recent papers:

**Electronic Communications in Probability**

*Electronic Communications in Probability (ECP)* is also an open access IMS/Bernoulli Society official journal. Read the journal online at [https://projecteuclid.org/euclid.ecp](https://projecteuclid.org/euclid.ecp)

**Volume 23: 2018 (to mid-December)**

On multiplication in $q$-Wiener chaoses ........................................................................... AURÉLIEN DEYA AND RENÉ SCHOTT; PAPER 1, 16pp.
New characterizations of the S topology on the Skorokhod space ................................ ADAM JAKUBOWSKI; PAPER 2, 16pp.
Respondent-Driven Sampling and Sparse Graph Convergence ........................................ SIVA ATHREYA AND ADRIAN RÖLLIN; PAPER 3, 12pp.
On recurrence of the multidimensional Lindley process ............................................... WOJCIECH CYGON AND JUDITH KLOAS; PAPER 4, 14pp.

The Hammersley-Welsh bound for self-avoiding walk revisited ............................................................... TOM HUTCROFT; PAPER 5, 8pp.
Hitting time and mixing time bounds of Stein’s factors .............................................................................. MICHAEL C.H. CHOI; PAPER 6, 10pp.
A matrix Bougerol identity and the Hua-Pickrell measures ...................................................................... THEODOROS ASSIOTIS; PAPER 7, 11pp.
Quasi-invariance of countable products of Cauchy measures under non-unitary dilations ....................... HAN CHENG LIE AND T.J. SULLIVAN; PAPER 8, 6pp.
Coupling of Brownian motions in Banach spaces ......................................................................................... ELISABETTA CANDELLERO AND WILFRED S. KENDALL; PAPER 9, 13pp.
Limiting behaviour of the stationary search cost distribution driven by a generalized gamma process ...... ALFRED KUME, FABRIZIO LEIEN, AND ANTONIO LUII; PAPER 11, 10pp.
The lower Snell envelope of smooth functions: an optional decomposition .............................................. ERICK TREVINO AGUIAR; PAPER 12, 10pp.
Column normalization of a random measurement matrix ............................................................................ SHAHAR MENDELSOHN; PAPER 13, 8pp.
The greedy walk on an inhomogeneous Poisson process .......................................................................... KATJA GABRYSCHEV AND ERIK THORNBLAD; PAPER 14, 11pp.
Particle approximation for Lagrangian Stochastic Models with specular boundary condition ................. MIREILLE BOSSY AND JEAN-FRANCOIS JABIR; PAPER 15, 14pp.
Asymptotic results in solvable two-charge models ...................................................................................... MARTINA DAL BORG, EMMA HÖVHANISYAN, AND ALAIN ROUULT; PAPER 16, 12pp.
Almost-sure asymptotics for the number of heaps inside a random sequence ........................................ A.-L. BASDEVANT AND A. SINGH; PAPER 17, 8pp.
How fast planar maps get swallowed by a peeling process ....................................................................... NICOLAS CURIEN AND CYRIL MARZOUK; PAPER 18, 11pp.
The Vlasov-Fokker-Planck equation in non-convex landscapes: convergence to equilibrium ............... MANH HONG DUONG AND JULIAN TUGAUT; PAPER 19, 10pp.
The largest root of random Kac polynomials is heavy tailed ...................................................................... RAPHAEL BUTEZ; PAPER 20, 9pp.
Order statistics of the moduli of the eigenvalues of product random matrices from polynomial ensembles ........................................................................................................... YANHUI WANG; PAPER 21, 14pp.
Hausdorff dimension of the record set of a fractional Brownian motion ................................................... LUCAS BENIGNI, CLÉMENT COSCO, ASSAF SHAPIRA, AND KAY JÖRG WIESE; PAPER 22, 8pp.
On the ladder heights of random walks attracted to stable laws of exponent 1 ........................................ KOHI YUSAMIYA; PAPER 23, 12pp.
A moment-generating formula for Erdős–Rényi component sizes .............................................................. BALÁZS RÁTH; PAPER 24, 14pp.
Where does a random process hit a fractal barrier? ................................................................................. ITAI BENJAMINI AND ALEXANDER SHAMOV; PAPER 25, 5pp.
Chaos expansion of 20 parabolic Anderson model ..................................................................................... YU GI AND JINGYU HUANG; PAPER 26, 10pp.
Existence of solution to scalar BSDEs with \( L^{\log(1+\varepsilon)} \)-integrable terminal values ....................... YING HU AND SHANJIAN TANG; PAPER 27, 11pp.
Martingale approximations for random fields ............................................................................................. PELIGRAD MAGDA AND NA ZHANG; PAPER 28, 9pp.

Discrete maximal regularity of an implicit Euler–Maruyama scheme with non-uniform time discretisation
for a class of stochastic partial differential equations .................................................................................... YOSHIHITO KAZASHI; PAPER 29, 14pp.
Optimal stopping and the sufficiency of randomized threshold strategies ................................................. VICKY HENDERSON, DAVID HOBSON, AND MATTHEW ZENG; PAPER 30, 11pp.
Local martingales in discrete time ............................................................................................................... VILMOS PROKAI AND JOHANNES RUF; PAPER 31, 11pp.
Cutoff for a stratified random walk on the hypercube .............................................................................. ANNA BEN-HAMOU AND YULVAL PERES; PAPER 32, 10pp.
Comparison inequalities for suprema of bounded empirical processes ...................................................... ANTOINE MARCHINA; PAPER 33, 7pp.
Large deviations for the maximum of a branching random walk .............................................................. NINA GANTERT AND THOMAS HÖFELSAUER; PAPER 34, 12pp.
Harnack inequality and derivative formula for stochastic heat equation with fractional noise ................ LITAN YAN AND XIUWEI YIN; PAPER 35, 11pp.
Stable cylindrical Lévy processes and the stochastic Cauchy problem ...................................................... MARKUS RIEDE; PAPER 36, 12pp.
Nonconventional random matrix products ................................................................................................. YURI KIFER AND SASHA SODIN; PAPER 37, 12pp.
Stein’s method for nonconventional sums .................................................................................................... YEOR HAFOUTA; PAPER 38, 14pp.
Further studies on square-root boundaries for Bessel processes .............................................................. LARBI ALILI AND HIROYUKI MATSUMOTO; PAPER 39, 9pp.
Approximating diffusion reflections at elastic boundaries ............................................................................ DIRK BECHERER, TODOR BILAREV, AND PETER FRENTRUP; PAPER 40, 12pp.
Moment bounds for some fractional stochastic heat equations on the ball ................................................. EDULAJIA NUALART; PAPER 41, 12pp.
A 2-spine decomposition of the critical Galton-Watson tree and a probabilistic proof of Yaglom’s theorem ............................................................. YAN-XIA REN, RENMING SONG, AND ZHENYAO SUN; PAPER 42, 12pp.
Random walk on the randomly-oriented Manhattan lattice ........................................................................ SEAN LEDGER, BÁLINT TÓTH, AND BENEDEK VALKÓ; PAPER 43, 11pp.
A user-friendly condition for exponential ergodicity in randomly switched environments ...................... MICHEL BENAIM, TOBIAS HURTH, AND EDUARD STRICKLER; PAPER 44, 12pp.
On a strong form of propagation of chaos for McKean-Vlasov equations ................................................ DANIEL LACKER; PAPER 45, 11pp.
Poisson–Dirichlet statistics for the extremes of a randomized Riemann zeta function ................................ FRÉDÉRIC OUIJMET; PAPER 46, 15pp.
Perfect shuffling by lazy swaps .................................................................................................................. OMER ANGEL AND ALEXANDER E. HOLROYD; PAPER 47, 11pp.
Tail asymptotics of maximums on trees in the critical case ........................................................................ MARIAJUS MASŁANKA; PAPER 48, 11pp.
Non-triviality of the vacancy phase transition for the Boolean model ....................................................... MATHEW D. PENROSE; PAPER 49, 8pp.

Critical radius and supremum of random spherical harmonics (II) ........................................... RENJIE FENG, XINGCHENG XU, AND ROBERT J. ADLER; PAPER 50, 11pp.
Convergence of maximum bisection ratio of sparse random graphs ........................................... BRICE HUANG; PAPER 51, 10pp.
Projections of spherical Brownian motion ................................................................................... ALEKSANDAR MIJATOVIC, VENO MRAMOR, AND GERÔNIMO URIBE BRAVO; PAPER 52, 12pp.
Fluctuations for block spin Ising models ....................................................................................... MATTHIAS LÖWE AND KRISTINA SCHUBERT; PAPER 53, 12pp.
Non-convergence of proportions of types in a preferential attachment graph with three co-existing types ................................................................. JOHN HASLEGRAVE AND JONATHAN JORDAN; PAPER 54, 12pp.
Short proofs in extrema of spectrally one sided Lévy processes ................................................... LOIC CHAUMONT AND JACEK MALECKI; PAPER 55, 12pp.
On covering paths with 3 dimensional random walk ................................................................... EVIATAR B. PROCACIA AND YUAN ZHANG; PAPER 57, 11pp.
The maximum deviation of the Sineβ counting process .............................................................. DIANE HOLCOMB AND ELLIOT PAQUETTE; PAPER 58, 13pp.
Uniqueness of solution to scalar BSDEs with \( L^\mu(\sqrt{2}\log(1+t))-\)integrable terminal values .................................................................................................................. RAINER BUCKDAHN, YING HU, AND SHANJIAN TANG; PAPER 59, 8pp.
Absolute continuity of complex martingales and of solutions to complex smoothing equations ................................................................................................................................. EWA DAMEK AND SEBASTIAN MENTE MEIER; PAPER 60, 12pp.
Fractional Brownian motion with zero Hurst parameter: a rough volatility viewpoint ................. EYAL NEUMAN AND MATTHIEU ROSENBAUM; PAPER 61, 12pp.
Coalescing random walk on unimodular graphs ............................................................................. ERIC FOXALL, TOM HUTCHcroft, AND MATTHEW JUNGE; PAPER 62, 10pp.
Existence of an unbounded vacant set for subcritical continuum percolation ................................. DANIEL AHLBERG, VINCENT TASSION, AND AUGUSTO TEIXEIRA; PAPER 63, 8pp.
Finitely dependent cycle coloring .................................................................................................. ALEXANDER E. HOLIDAY, TOM HUTCHcroft, AND AVI LEVY; PAPER 64, 12pp.
On the maximum of the discretely sampled fractional Brownian motion with small Hurst parameter ................................................................................................................................. KONSTANTIN BOROVOKOV AND MIKHAIL ZHITLUKHIN; PAPER 65, 8pp.
Random walks in doubly random scenery .................................................................................... ŁUKASZ TRESZCZOTKO; PAPER 66, 11pp.
A Brownian optimal switching problem under incomplete information ........................................ MARCUS OLOFSSON; PAPER 67, 12pp.
Occupation time of Lévy processes with jumps rational Laplace transforms ................................. AIT-AOUDIA DIJAL; PAPER 68, 13pp.
On the maximum of conditioned random walks and tightness for pinning models ......................... FRANCESCO CARAVENNA; PAPER 69, 13pp.
Eigenvectors of non normal random matrices .............................................................................. FLORENT BENAYCH-GEORGES AND OFER ZEITOUNI; PAPER 70, 12pp.
Fast mixing of metropolis-hastings with unimodal targets ............................................................ JAMES JOHN DROW AND AARON SMITH; PAPER 71, 9pp.
A note on tail triviality for determinantal point processes .............................................................. RUSSELL LYONS; PAPER 72, 3pp.
Approximation of a generalized continuous-state branching process with interaction ........................ IBRAHIMA DRAMÉ AND ÉTIENNE PARDOUX; PAPER 73, 14pp.
Squared Bessel processes of positive and negative dimension embedded in Brownian local times .................................................................................................................................................. JIM PITMAN AND MATTHIAS WINKLE; PAPER 74, 13pp.
Uniform Hausdorff dimension result for the inverse images of stable Lévy processes .................... RENNING SONG, YIMIN XIAO, AND XIAODUAN YANG; PAPER 75, 7pp.
Concentration inequalities for polynomials of contracting Ising models ........................................ REZA GHEISSARI, EYAL LUBETZKY, AND YUVAL PERES; PAPER 76, 12pp.
An improved upper bound for the critical value of the contact process on \( \mathbb{Z}^d \) with \( d \geq 3 \) ................................................................................................................................. XIAOFENG XUE; PAPER 77, 11pp.
About Doob’s inequality, entropy and Tchebichef .................................... ................................. ENRIQUE DIAZ-HERNÁNDEZ; PAPER 78, 12pp.
A large deviation principle for the Erdős–Rényi uniform random graph ........................................ AMIR DEMBO AND EYAL LUBETZKY; PAPER 79, 13pp.
Block size in Geometric(p)-biased permutations ........................................................................ IRINA CRISTALI, VINIT RANJAN, JAKE STEINBERG, ERIN BECKMAN, RICK DURRETT, MATTHEW JUNGE, AND JAMES NOLEN; PAPER 80, 10pp.
A sharp symmetrized form of Talagrand’s transport-entropy inequality for the Gaussian measure ................................................................................................................................. MAX FATHI; PAPER 81, 9pp.
A renewal theorem and supremum of a perturbed random walk ................................................... EWA DAMEK AND BARTOSZ KOŁODZIEJEK; PAPER 82, 13pp.
Biggins’ martingale convergence for branching Lévy processes .................................................. JEAN BERTOIN AND BASTIEN MALLEIN; PAPER 83, 12pp.
Mean-field limit of a particle approximation of the one-dimensional parabolic-parabolic Keller-Segel model without smoothing .............................................................. JEAN-FRANÇOIS JABIR, DENIS TALAY, AND MILICA TOMAŠEVIĆ; PAPER 84, 14pp.
On pathwise quadratic variation for càdlàg functions .................................................................... HENRY CHIU AND RAMA CONT; PAPER 85, 12pp.
High points of branching Brownian motion and McKean’s Martingale in the Bovier-Hartung extremal process .......................................................................................................................... CONSTANTIN GLENN, NICOLA KISTLER, AND MARIUS A. SCHMIDT; PAPER 86, 12pp.
A functional limit theorem for the profile of random recursive trees ............................................ ALEXANDER ISKANDOV AND ZAKHAR KABLUKHKO; PAPER 87, 13pp.
A stochastic model for the evolution of species with random fitness ........................................... DANIELA BERTACCHI, JÜRI LEMBER, AND FABIO ZUCCA; PAPER 88, 13pp.
Slowdown estimates for one-dimensional random walks in random environment with holding times ................................................................................................................................. AMIR DEMBO, RYOKI FUKUSHIMA, AND NAOKI KUBOTA; PAPER 89, 12pp.

EJP and ECP are open access journals of IMS and the Bernoulli Society. Donations to the IMS Open Access Fund help to keep these journals free: https://www.imstat.org/shop/donation/.
**Hand writing: Right, legitimate and proper?**
The new world of data ethics

Contributing Editor David J. Hand (Imperial College London) has been thinking about the ethical, social and policy challenges associated with the rise and rise of “big data”.

Data ethics seem to be the flavour of the month. In the UK alone, the establishment of the National Statistician's Data Ethics Advisory Committee has been quickly followed by the Government Department of Digital, Culture, Media and Sport launching its Data Ethics and Innovation Centre, and the Nuffield Foundation launching its Ada Lovelace Centre, aimed at taking “a lead on the interaction between data, ethics, and artificial intelligence in the UK”. And there’s nothing unique about the UK in this—a quick Google search shows a proliferation of such bodies with, for example, the Council for Big Data, Ethics, and Society being established in the US in 2014, aimed at providing “critical social and cultural perspectives on big data initiatives”. Indeed, it is not even limited to governments: corporations and other bodies are also concerned that their use of data, which is often central to their business model, should be ethically sound, not least to avoid the risk of public backlash and possibly highly restrictive legislation.

Of course, statisticians have long been aware of the ethical dimensions of their work, though usually these were manifest through particular application domains, such as a requirement to include statisticians on medical ethics committees, or the requirement to be able to explain an adverse decision in the context of consumer loans. Professional bodies of statisticians, such as the ASA and RSS, have long had systems of ethical guidelines, as have other organisations for which data are central (e.g. the ACM).

But more recently, recognition of the need for such ethical oversight has grown, mainly because of raised awareness of the potential and pervasiveness of big data, data science, and artificial intelligence. Attention has shifted, from rather specialised concerns for informed consent in clinical trials, the preservation of anonymity in survey work, avoiding prohibited variables in insurance decisions, and so on, to much more “in-your-face” issues. These are matters such as selection bias leading to racist decisions, chatbots being gratuitously offensive, and questions of who is responsible when a driverless car crashes or a data theft leads to fraud.

Incidents like these occur for a variety of reasons. Automatic data collection leads to massive data sets accumulating without human oversight. Adaptive and self-learning algorithms go their own way (that's the whole point, really). And the line between research and practice is becoming blurred in many contexts. Moreover, there is increasing tension between the data minimisation principle (that only sufficient data should be collected to answer the specific question) and the promise of data mining (that large data sets contain nuggets of great potential interest and value).

Resolutions of such tensions are not easy to arrive at, and solutions are complicated by the nature of public opinion—which is both heterogeneous and volatile. Different sections of the public, having had different experiences and been exposed to different circumstances, will have different views on what is right, legitimate, and proper. Worse still, those views will fluctuate with time—perhaps especially in response to events such as media reports of data losses or thefts, or fraud associated with advanced use of data.

Although sometimes described as the new oil, because of the way data, and data science, are revolutionising society just as fossil fuels did earlier, data have unique properties, leading to correspondingly unique ethical challenges. These properties will be very familiar to statisticians: data can be copied (as many times as you like), data can be sold or given away and yet simultaneously retained, data can be used multiple times for many different purposes, data can be of insufficient quality for some uses and yet perfectly adequate for other uses, and so on.

Such diverse applications and properties of data are compounded when data sets

---

**Further reading**


*Philosophical Transactions of the Royal Society*, Volume 374, Issue 2083, theme issue on The Ethical Impact of Data Science.


are linked, perhaps in unforeseen and indeed unforeseeable ways. A data set might even be linked to new data which did not exist at the time the first data set was collected. There are already plenty of examples where privacy has been breached through sophisticated linking exercises.

Ethical considerations cover the concept of personal data (this lies at the core of the EU’s General Data Protection Regulation), data ownership (is this a meaningful concept? Some regard data they have collected, possibly at great expense, as theirs, while others regard such data as belong to the person they describe), consent and purpose, privacy and confidentiality, the right to be forgotten, the right to access data, an awareness of new developments in data science technology, the views of the public, and trustworthiness.

Such considerations do not permit simple formulaic answers, since these must be context-dependent and dynamic. Instead, solutions must be principles-based, with higher-level considerations guiding decisions in any particular context. These principles include that the data and their analysis should serve the public good, should be transparent, must be non-discriminatory, should be trustworthy and honest, should protect individual identities, and should adhere to legal requirements. Moreover, the world of data and data science is changing rapidly, as large data sets continue to accumulate, as new analytic tools continue to be developed, and as real-time and online processing becomes increasingly prevalent (for example, with the advent of the Internet of Things). This means that the principles must be regularly reviewed to see that they remain adequate.

In seeking to apply ethical principles, a delicate balance must be often be struck. Constraints on data science must not be so great that they stifle innovation and social progress, preventing statistics and data science from benefitting humanity. That would be just as unethical.

---

**IMS awards: nominate now**

There is still time to nominate your outstanding colleagues and collaborators IMS Fellowship or for the Carver medal.

A candidate for the **IMS Fellowship** shall have demonstrated distinction in research in statistics or probability, by publication of independent work of merit. This qualification may be partly or wholly waived in the case of either a candidate of well-established leadership whose contributions to the field of statistics or probability other than original research shall be judged of equal value; or a candidate of well-established leadership in the application of statistics or probability, whose work has contributed greatly to the utility of and the appreciation of these areas. Candidates for fellowship should be members of IMS when nominated (you can email Elyse Gustafson erg@imstat.org to check this before you start). The nomination deadline is January 31, 2019. For nomination requirements, see https://www.imstat.org/honored-ims-fellows/nominations-for-ims-fellow/.

Nominations are invited for the **Carver Medal**, created by the IMS in honor of Harry C. Carver, for exceptional service specifically to the IMS. All nominations must be received by February 1, 2019. Please visit https://www.imstat.org/ims-awards/harry-c-carver-medal/.

---

**...or apply for a Travel Award**

Applications are open for two types of travel awards. The **IMS Hannan Graduate Student Travel Award** funds travel and registration to attend (and possibly present a paper/poster at) an IMS sponsored or co-sponsored meeting. This travel award is available to IMS members who are graduate students (seeking a Masters or PhD degree) studying some area of statistical science or probability.

If you are a New Researcher (awarded your PhD in 2013–18) looking for travel funds, you should apply for the **IMS New Researcher Travel Award** to fund travel, and possibly other expenses, to present a paper or a poster at an IMS sponsored or co-sponsored meeting (apart from the IMS New Researcher’s Conference, which is funded separately).

Applicants for both these travel awards must be members of IMS, though joining at the time of application is allowed (student membership is free, and new graduate membership discounted!). The application deadline for both is February 1, 2019.

Here’s Anirban DasGupta’s latest puzzle:

The previous problem on inference based on the distribution of a nonsufficient statistic required the use of both Markov Chain theory and statistical inference [see solution below]. It was a problem on probability and statistics simultaneously. This month we pose a rather simple problem which should be fun to think about, and has many possible answers! So, hopefully, many of you will think of one of the correct answers.

Let $C(\mu, 1)$ denote the Cauchy distribution on the real line with location parameter $\mu$ and scale parameter equal to one. Suppose $\mu$ belongs to $\mathcal{R}$ (the parameter space) and that we wish to estimate it under squared error loss function. Let $X_1, X_2, \ldots$ be an iid $C(\mu, 1)$ sequence. Assume that $n > 7$. Give, with proof, a sequence of estimators $T_n(X_1, X_2, \ldots, X_n)$ of $\mu$, such that:

(a) For every $n$, $T_n$ is inadmissible;
(b) For no $n$, $T_n$ is minimax;
(c) For every $n$, $T_n$ is unbiased;
(d) The sequence of estimators $(T_n)$ is asymptotically efficient.
(e) Compute the numerical value of the estimator you have proposed for the following data values: 0.1, 2.9, −0.6, 3.1, 3.6, −6.5, 0.2, 1.0, 2.4, −15.9.

Solution to puzzle 22

Contributing Editor Anirban DasGupta writes:

Embed the longest run problem into a stationary Markov chain with the following transition matrix. Denote the observed longest head run in $n$ tosses of a $p$-coin by $L_n$ and suppose we wish to find $P(L_n \geq m)$, $m$ a general non-negative integer. You go to state zero from state $i$ with probability $1-p$ and go to state $i+1$ from state $i$ with probability $p$, with state $m$ as an absorbing state.

Denote this $(m+1) \times (m+1)$ matrix by $P_m$ and let $Q[n,m]$ denote its $n$th power. Then $P(L_n \geq m)$ is the last element in the zero-th row of $Q[n,m]$. By evaluating $P(L_n \geq 1) - P(L_n \geq 2)$ with $n = 10$, one gets

$$P(L_n = 1) = 10p - 54p^2 + 128p^3 - 189p^4 + 216p^5 - 205p^6 + 144p^7 - 63p^8 + 14p^9 - p^{10}.$$  

It is uniquely maximized at $p = .1616$, which is the value of the MLE of $p$ based on $L_n$ alone. A moment estimate is easily found by inverting the expectation formula

$$E(L_n) = \frac{\log n}{\log \hat{p}} - \frac{\log(1-p)}{\log p}.$$  

An approximate solution is

$$\hat{p} = n^{-1/2}.$$  

This estimate will have a fairly serious bias problem. However, with work, we can derive a (high order) asymptotic expansion for the bias of $\hat{p}$. Hence, we can correct $\hat{p}$ for its bias, at least to the first order. These are very classic ideas in large sample theory of inference.

The Student Puzzle Corner contains problems in statistics or probability. Solving them may require a literature search. Student IMS members are invited to submit solutions (to bulletin@imstat.org with subject “Student Puzzle Corner”). The deadline is January 25, 2019.

The names of student members who submit correct solutions, and the answer, will be published in the following issue. The Puzzle Editor’s decision is final.

Student member? Apply for IMS Hannan Travel award

If you are a graduate student, studying some area of statistical science or probability, who has not yet received a PhD degree, you could apply for an IMS Hannan Travel Award. The award funds travel to an IMS sponsored or co-sponsored meeting. You are encouraged to present a paper or poster at the meeting, but this is not required. You need to be a student member of IMS, which is free, and you can join at the time of applying for the award.

The deadline for applications is February 1, 2019.

See https://www.imstat.org/ims-awards/ims-hannan-graduate-student-travel-award/
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

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 co-sponsored meeting
The Tenth International Conference on Matrix-Analytic Methods in Stochastic Models
February 13–15, 2019
The University of Tasmania, Hobart, Australia
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
The plenary speakers for the conference are: Charles Bordenave, Université de Toulouse, France (IMS Medallion Lecturer); Ton Dicker, 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. Applied 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.
More IMS meetings around the world

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/
The aim of the conference is to be a rendezvous for computer age statisticians, to explore their remarkable contributions and journey through new vistas of twenty-first century Statistics. The interactions during this meeting are expected to spark 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. Pre-conference workshops on January 2, 2019.

IMS co-sponsored meeting
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
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)
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
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/obayesconference/
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.
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:** Massimiliano Gubinelli.

**Doob Lecture:** Jeremy Quastel.

**Schramm Lecture:** Stanislav Smirnov.

IMS co-sponsored meeting

**2019 ENAR dates, 2019–2020**

- March 24–27, 2019: in Philadelphia, PA

[Visit the website](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

**2019 WNAR/IMS meeting**

June 23–26, 2019

Portland, Oregon, USA

[Visit the website](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

[Visit the website](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

[Visit the website](http://sites.math.northwestern.edu/SPA2019/)

The 41st Conference on 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:** Massimiliano 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

[Visit the website](https://iciam2019.org/index.php)


IMS co-sponsored meeting

**The 7th International Workshop in Sequential Methodologies**

June 18–21, 2019. Binghamton, USA

[Visit the website](https://sites.google.com/view/iwsm2019)

Hosted by Department of Mathematical Sciences at Binghamton University, State University of New York (SUNY), USA.
Other meetings and events around the world

Statistics & Data Science: Beyond big, corrupted or missing data  
January 19–20, 2019  
La Jolla, CA  
[link](http://hdsi.ucsd.edu)  
This two-day Symposium is organized in collaboration with the new Halıcıoğlu Data Science Institute (hdsi.ucsd.edu) of the University of California, San Diego. The program will include plenary talks, invited talks, and a poster session, bringing together senior and junior people pushing the frontier of current research. People interested in participating may contact Jelena Bradic, jbradic@ucsd.edu

ASA Biopharmaceutical Section:  
Regulatory-Industry Statistics Workshop  
September 23–25, 2019  
Washington DC  
[link](https://www2.amstat.org/meetings/biop/2019/)  
Proposals for parallel sessions, short courses, and town halls are being accepted now. Save the date and submit your session proposal for the 2019 workshop: submission deadline: December 14

The workshop has sold out two years in a row, so as attendees can attest, it is a valuable opportunity to share or showcase your ideas with the best in the field, including statistical practitioners in the biopharmaceutical arena from industry, academia, and the FDA. Poster and roundtable proposal submission open January 22.

SYSORM 2019  
June 4–7, 2019  
El Escorial, Spain  
[link](https://eventos.ucm.es/go/sysorm19)  
The 2nd Spanish Young Statisticians and Operational Researchers Meeting (SYSORM) will be held on 4–7 June 2019 in El Escorial (Spain), under the auspices of the Spanish Society of Statistics and Operations Research (SEIO). The aim of the meeting, organized for and by young researchers, is to represent and provide visibility to the newer generations of talented researchers in Statistics and Operations Research in Spain and neighboring countries. The meeting will have four plenary speakers and a mix of invited and contributed talks to be presented in a single continuous session. Details of the conference, including submission deadlines, can be found at the website above.

Workshop on Theory and Applications of Stochastic Partial Differential Equations  
June 10–14, 2019  
The Fields Institute, Toronto, Canada  
[link](http://www.fields.utoronto.ca/activities/18-19/SPDEs)  
Organizers: Raluca Balan, Lluis Quer-Sardanyons and Jian Song  
The area of SPDEs has been growing steadily in the past 30 years, providing new techniques for analyzing complex systems whose behaviour is subject to random perturbations. SPDEs can be used for modelling a wide range of physical phenomena, encountered in statistical mechanics, mathematical physics, theoretical neuroscience, fluid dynamics and mathematical finance.

In addition to talks given by world-experts in this area, the workshop will contain 4 expository lectures (of 90 minutes each) given by internationally renowned researchers Robert Dalang (École Polytechnique Fédérale de Lausanne) and David Nualart (University of Kansas), intended for graduate students and researchers who are not experts in the field.

The workshop will also contain a poster session. Participants who are interested in presenting a poster are advised to contact the organizers before June 1, 2019.

The registration fee of C$185 includes coffee breaks and lunch, which will be served on site. Optional excursion to Niagara Falls.

29th European Safety and Reliability Conference (ESREL 2019)  
September 22–26, 2019, Hannover, Germany  
[link](https://esrel2019.org/)  
The objective of ESREL 2019 is to provide an all-round inspiring environment and a multi-disciplinary forum for the exchange of knowledge and expertise on theories and methods in the field of risk, safety and reliability, and on their application to a wide range of industrial, civil and social sectors and problem areas. Research and applications in the connection between probability theory and statistics with engineering is of particular interest. This range is structured into 19 methodological topics and 23 application areas and sectors. Papers presented at ESREL 2019 will be published in open access conference proceedings by Research Publishing Services, Singapore, and indexed. Post-conference special issues in indexed journals will be prepared based on extended versions of papers selected from the conference. We would be very pleased to receive your valuable contribution and to welcome you at ESREL 2019!
Perspectives on high-dimensional data analysis (HDDA-IX)
June 24–27, 2019
Uppsala, Sweden

web: https://indico.uu.se/event/526/overview

The 9th International Workshop ‘Perspectives on High-Dimensional Data Analysis’ (HDDA-IX) will be hosted during June 24–27, 2019 at Uppsala University, Sweden. The conference aims to bring together theoretical and applied researchers and data analysts from all walks of life, working within the broad realm of high-dimensional statistics. People from both academic and non-academic institutions are welcome to participate. We also welcome Ph.D. students working on latest avenues of research within the conference theme to participate. Both oral and poster presentations can be submitted. For details, please visit the webpage. Abstract submission deadline: 15 February 2019.

Integrable Probability summer school
May 27–June 8, 2019
Charlottesville, Virginia, USA

web: http://vipss.int-prob.org/

The school, held at the University of Virginia, Charlottesville, aims to educate graduate students and young researchers in recent trends around Integrable Probability—a rapidly developing field at the interface of probability / mathematical physics / statistical physics on the one hand, and representation theory / integrable systems on the other.

There will be 4 mini-courses. In Week 1: Dmitry Chelkak (École Normale Supérieure, Paris, France) and Ole Warnaar (University of Queensland, Brisbane, Australia); Week 2: Tomohiro Sasamoto (Tokyo Institute of Technology, Tokyo, Japan) and Paul Zinn-Justin (University of Melbourne, Melbourne, Australia).

We have some NSF support to cover accommodation at a University of Virginia residence hall, and to partially contribute towards travel expenses (the travel support amount depends on the number of interested participants). Preference will be given to graduate students, postdocs, early career researchers, and members of underrepresented groups.

Deadlines:
- To request residence hall accommodation: January 5, 2019
- To request financial support: March 1, 2019
- General registration: April 20, 2019

More information and registration at the website above.

Design and Statistical Analysis of Clinical Studies
January 7–11, 2019. Pala, Kerala, India

web: http://stcp.ac.in/

As part of its diamond jubilee celebrations, the Department of Statistics, St. Thomas College Pala is organizing this international workshop. 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.
More meetings around the world

Applied Stochastic Models and Data Analysis International Conference (ASMDA2019) and Demographics2019 Workshop
June 11–14, 2019
Florence, Italy
w http://www.asmda.es/asmda2019.html
Submit an abstract, paper, invited talk and/or an invited session (3–6 papers) to the forthcoming ASMDA conference or Demographics workshop. Proposals for plenary and keynote talks are welcomed.

The publications of the conference include the book of abstracts (electronic and in paper form); electronic proceedings in the web in a permanent website; publications in international journals; and publications in edited books.

The same event will host the Demographics2019 International Workshop (http://www.asmda.es/demographics2019.html). The main focus is on Health State and the optimal retirement age.

12th Chaotic Modeling and Simulation International Conference (CHAOS2019)
June 18–21, 2019. Chania, Crete, Greece
w www.cmsim.org
The forthcoming Nonlinear Systems Conference, titled 12th Chaotic Modeling and Simulation International Conference (CHAOS2019) will be hosted in the Cultural Centre of Chania on the Greek island of Crete.

Chaos theory has developed rapidly in the last decades. With CHAOS2019 we celebrate 12 years of active presence in the field via the annual conference, the proceedings and publications in books and the CMSIM Journal (www.cmsim.eu).

For more information, abstract submission and special session proposals please visit the conference website or send email to Secretariat@cmsim1.org.

Lectures on the Poisson Process
Günter Last and Mathew Penrose

IMS members receive a 40% discount. Order from cambridge.org/ims
Hardback $89.99 $53.99
Paperback $34.99 $20.99
eBook $28.00 $16.80

The Poisson process, a core object in modern probability, enjoys a richer theory than is sometimes appreciated. This volume develops the theory in the setting of a general abstract measure space, establishing basic results and properties as well as certain advanced topics in the stochastic analysis of the Poisson process. Also discussed are applications and related topics in stochastic geometry, including stationary point processes, the Boolean model, the Gilbert graph, stable allocations, and hyperplane processes.

Comprehensive, rigorous, and self-contained, this text is ideal for graduate courses or for self-study, with a substantial number of exercises for each chapter. Mathematical prerequisites, mainly a sound knowledge of measure-theoretic probability, are kept in the background, but are reviewed comprehensively in the appendix.

The authors’ approach is informed both by their research and by their extensive experience in teaching at undergraduate and graduate levels.
## Employment Opportunities around the world

<table>
<thead>
<tr>
<th>Country</th>
<th>University/Location</th>
<th>Position</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada: Burnaby, BC</td>
<td>Simon Fraser University</td>
<td>Assistant Professor</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45122303">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45122303</a></td>
</tr>
<tr>
<td>Canada: Toronto, ON</td>
<td>University of Toronto</td>
<td>Associate Professor, Statistical Information</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44556855">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44556855</a></td>
</tr>
<tr>
<td>Canada: Toronto, ON</td>
<td>University of Toronto, Department of Statistical Sciences</td>
<td>Assistant Professor, Statistical Information</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44556850">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44556850</a></td>
</tr>
<tr>
<td>Canada: Waterloo, ON</td>
<td>University of Waterloo, Department of Statistics &amp; Actuarial Science</td>
<td>Tenure-track or tenured faculty positions in Statistics or Biostatistics</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44708616">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44708616</a></td>
</tr>
<tr>
<td>Canada: Waterloo, ON</td>
<td>University of Waterloo</td>
<td>Tenure-track or Tenured position in Actuarial Science</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44708605">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44708605</a></td>
</tr>
<tr>
<td>China: Shenzhen, Guangdong</td>
<td>The Chinese University of Hong Kong, Shenzhen</td>
<td>Tenured/tenure-track faculty positions</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=43646674">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=43646674</a></td>
</tr>
<tr>
<td>Hong Kong: Kowloon</td>
<td>City University of Hong Kong</td>
<td>Dean of School of Data Science</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44965238">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44965238</a></td>
</tr>
<tr>
<td>Netherlands: Enschede</td>
<td>University of Twente</td>
<td>Assistant Professor in Statistics</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44796064">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44796064</a></td>
</tr>
<tr>
<td>Netherlands: Tilburg</td>
<td>Tilburg University, Econometrics &amp; Operations Research</td>
<td>Two Assistant Professor Positions in Econometric Theory</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44495646">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44495646</a></td>
</tr>
<tr>
<td>New Zealand: Auckland</td>
<td>The University of Auckland</td>
<td>Professional Teaching Fellow/ Lecturer/ Senior Lecturer/ Associate Professor</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44684835">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44684835</a></td>
</tr>
<tr>
<td>New Zealand: Wellington</td>
<td>Victoria University of Wellington</td>
<td>Professor in Statistics and Data Science</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45261567">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45261567</a></td>
</tr>
<tr>
<td>Saudi Arabia: Thuwal</td>
<td>KAUST (King Abdullah University of Science and Technology)</td>
<td>Faculty Position in Statistical Data Science</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45102888">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=45102888</a></td>
</tr>
<tr>
<td>Sweden: Stockholm</td>
<td>KTH, Royal Institute of Technology</td>
<td>Postdoc</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=38183763">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=38183763</a></td>
</tr>
<tr>
<td>United Kingdom: Cambridge</td>
<td>Department of Pure Mathematics and Mathematical Statistics, University of Cambridge</td>
<td>University Lecturer in Statistics</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44495724">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44495724</a></td>
</tr>
<tr>
<td>United Kingdom: Glasgow</td>
<td>University of Glasgow</td>
<td>L/SL/R In Statistics</td>
<td><a href="http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44765765">http://jobs.imstat.org/c/job.cfm?site_id=1847&amp;jb=44765765</a></td>
</tr>
</tbody>
</table>

::: Search our online database of the latest jobs around the world for free at http://jobs.imstat.org :::
More Employment Opportunities

United States: Auburn, 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, 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
Visiting Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44189747

United States: Riverside, CA
University of California, Riverside
Assistant/Associate Professor of Teaching, Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=45084755

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: 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, Storrs
Assistant/Associate Professor, Department of Statistics
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44534565

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=4334439

United States: Detroit, MI
Wayne State University
Faculty
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44799251

United States: East Lansing, MI
Michigan State University
Tenured Faculty Position
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44967832

United States: Duluth, MN
University of Minnesota, Duluth
Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44684031

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

::: Advertise current job opportunities for only $305 for 60 days :::
See http://jobs.imstat.org for details :::
United States: Princeton, NJ
Princeton University
Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=43865837

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: Philadelphia, PA
University of Pennsylvania School of Nursing
Associated Faculty - Research Track - Statistics/Director of BECCA
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44534105

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: Philadelphia, PA
University of Pennsylvania, Wharton Department of Statistics
Departmental Postdoctoral Researcher
The Department of Statistics of the Wharton School, University of Pennsylvania, is seeking candidates for a Departmental Postdoctoral Researcher position in the area of statistics and/or probability. The position is designed to be a career-building step for new scholars. The primary focus is for the scholar to develop her/his research program. A light teaching load will also be part of the position. The position will start in Summer 2019 and continue for two years with a possible extension to three years. A competitive salary will be provided.

Candidates should show outstanding capacity for research, as well as excellent communication skills. Applicants must have a Ph.D. from an accredited institution.

Please visit our website, https://statistics.wharton.upenn.edu/recruiting/dept-postdoc-position, for a description of the department and a link to submit a CV and other relevant material. Any questions should be directed by e-mail to stat.postdoc.hire@wharton.upenn.edu.

The University of Pennsylvania is an EOE. Minorities / Women / Individuals with disabilities / Protected Veterans are encouraged to apply.

United States: Philadelphia, PA
University of Pennsylvania, Wharton Department of Statistics
Departmental Postdoctoral Researcher
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=45122063

United States: Philadelphia, PA
University of Pennsylvania, Wharton Department of Statistics
Departmental Postdoctoral Researcher
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=4461700

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: Fairfax, VA
George Mason University, Statistics
Department Chair and Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44468062

United States: Fairfax, VA
College of Health and Human Services at George Mason University
Multiple Open-Rank Biostatistics / Data Science Faculty Positions
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=44853686

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=4534307

United States: Norfolk, VA
Old Dominion University
Statistics - Tenure-Track Assistant Professor
http://jobs.imstat.org/c/job.cfm?site_id=1847&jb=45084881

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

::: Search our online database of the latest jobs around the world for free at http://jobs.imstat.org :::
International Calendar of Statistical Events

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

January 2019

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

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


January 19–20: La Jolla, CA, USA. Statistics & Data Science: Beyond big, corrupted or missing data w http://hdsi.ucsd.edu


February 2019


February 14–16: New Orleans, USA. Conference on Statistical Practice w https://www2.amstat.org/meetings/csp/2019/

March 2019

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


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

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

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


May 2019


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


May 27–June 8: Charlottestown, VA, USA. Integrable Probability summer school w http://vipss.int-prob.org/


June 2019


June 4–7: El Escorial, Spain. SYSORM 2019 w http://www.cs.uc3m.es/EME/sysorm19


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

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


June 19–21: Lima, Peru. VI Congreso Bayesiano de América Latina / Bayesian Congress of Latin America (VI COBAL) w https://sites.google.com/site/colabal2019/

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

June 24–27: Uppsala, Sweden. Perspectives on high-dimensional data analysis (HDDA-IX) w https://indico.uu.se/event/526/overview

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

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

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

July 2019

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


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


August 2019


International Calendar continued

September 2019

- September 22–26: Hannover, Germany. 29th European Safety and Reliability Conference (ESREL 2019) w https://esrel2019.org/

October 2019


December 2019


March 2020


June 2020


July 2020

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

August 2020


March 2021

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

August 2021


March 2022

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

August 2022

- July/August: Location TBC. IMS Annual Meeting w TBC

August 2023

- 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


August 2025

Membership and Subscription Information

Journals

Individual Memberships
Each individual member receives the IMS Bulletin (print and/or electronic) and may elect to receive one or more of the five scientific journals. Members pay annual dues of $105. An additional $101 is added to the dues of members for each scientific journal selected ($65 for Stat Sci). Reduced membership dues are available to full-time students, new graduates, permanent residents of countries designated by the IMS Council, and retired members.

Individual and General Subscriptions

IMS Bulletin
The IMS Bulletin publishes articles and news of interest to IMS members and to statisticians and probabilists in general, as well as details of IMS meetings and an international calendar of statistical events. Views and opinions in editorials and articles are not to be understood as official expressions of the Institute’s policy unless so stated; publication does not necessarily imply endorsement in any way of the opinions expressed therein, and the IMS Bulletin and its publisher do not accept any responsibility for them. The IMS Bulletin is copyrighted and authors of individual articles may be asked to sign a copyright transfer to the IMS before publication.

The IMS Bulletin (ISSN 1544-1881) is published eight times per year in January/February, March, April/May, June/July, August, September, October/November, and December, by the Institute of Mathematical Statistics, 1163 Somerset Dr, Cleveland, Ohio 44122 USA. Periodicals postage paid at Cleveland, Ohio, and at additional mailing offices. Postmaster: Send address changes to Institute of Mathematical Statistics, 9650 Rockville Pike, Suite L1303A, Bethesda, MD 20814-3998.

Copyright © 2019 by the Institute of Mathematical Statistics. Printed by The Sheridan Press, 450 Fame Avenue, Hanover, PA 17331, USA.

Information for Advertisers

General information: The IMS Bulletin and webpages are the official news organs of the Institute of Mathematical Statistics. The IMS Bulletin, established in 1972, is published 8 times per year. Print circulation is around 4,000 paper copies, and it is also free online in PDF format at http://bulletin.imstat.org, posted online about two weeks before mailout (average downloads over 8,000). Subscription to the IMS Bulletin costs $115. To subscribe, call 877-557-4674 (US toll-free) or +1 216 295 2340 (international), or email staff@imstat.org. The IMS website, http://imstat.org, established in 1996, receives over 30,000 visits per month. Public access is free.

Advertising job vacancies
A single 60-day online job posting costs just $305.00. We will also include the basic information about your job ad (position title, location, company name, job function and a link to the full ad) in the IMS Bulletin at no extra charge. See http://jobs.imstat.org

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

Rates and requirements for display advertising
Display advertising allows for placement of camera-ready ads for journals, books, software, etc. A camera-ready ad should be sent as a grayscale PDF/EPS with all fonts embedded. Email your advert to Audrey Weiss, IMS Advertising Coordinator admin@imstat.org or see http://bulletin.imstat.org/advertise

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimensions: width x height</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 page</td>
<td>4.9” wide x 4” high (125 x 102 mm)</td>
<td>$270</td>
</tr>
<tr>
<td>1/5 page</td>
<td>7.5” wide x 4” high (190 x 102 mm)</td>
<td>$335</td>
</tr>
<tr>
<td>3/8 page</td>
<td>4.9” wide x 8” high (125 x 203 mm)</td>
<td>$390</td>
</tr>
<tr>
<td>Full page (to edge, including 3/8” bleed)</td>
<td>8.75” wide x 11.25” high (222 mm x 286 mm)</td>
<td>$445</td>
</tr>
<tr>
<td>Full page (within usual Bulletin margins)</td>
<td>7.5” wide x 9.42” high (190 mm x 239 mm)</td>
<td>$445</td>
</tr>
</tbody>
</table>

Deadlines and Mail Dates for IMS Bulletin

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