

August 2021

CONTENTS

- 1 **IMS Election results**
- 2–3 **Members' news:** Zheng Tracy Ke, Kavita Ramanan, Joseph Romano, Michael I. Jordan, Maria Eulália Vares, Richard Samworth, Jeremy Quastel, John Kingman, Adrian Smith, Noel Cressie, Fang Han, Aaditya Ramdas, Anru Zhang
- 4 **New IMS journal editors; new Program Secretary**
- 5 **President introduces Membership Survey**
- 6 **Membership Survey report**
- 10 **Propose invited session for IMS London meeting; New PMS editors; IMS lecturers**
- 11 **Radu's Rides:** Oh *OUCH*, to be young again!
- 13 **Recent papers:** *Bayesian Analysis, BJPS*
- 14 **Anirban's Angle:** Questions
- 15 **Statistical Significance and Replicability: a report**
- 17 **Student Puzzle 34**
- 18 **J. Statist. & Data Sci. Educ.**
- 19 **Hand Writing:** Algorithms
- 20 **Meetings (including online)**
- 24 **Employment Opportunities**
- 25 **Calendar of Meetings**
- 27 **Information for Advertisers**

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imstat.org/news



IMS Election Results

We are pleased to announce the 2021 election results, and to introduce the newly elected members of IMS Council. The next President-Elect is **Peter Bühlmann**, and the six new members of Council are: **Aurore Delaigle**, **Davar Khoshnevisan**, **Samuel Kou**, **Dylan Small**, and **Daniela Witten** (who will each serve a three-year term), and **Radu Craiu** (whose term is two years). All will take up their new roles at the IMS Council and Business meeting, which will be held online again this year, on September 8.



*Incoming President-elect
Peter Bühlmann*

The new Council members will be joining 10 other Council members: **Ed Perkins**, **Gesine Reinert**, **Christian Robert**, **Qi-Man Shao** and **Alastair Young**, who will serve another year; and **Tony Cai**, **Richard Davis**, **Alice Guionnet**, **Martin Wainwright** and **Fang Yao**, who will be on Council for another two years. **Christina Goldschmidt**, **Susan Holmes**, **Xihong Lin**, **Richard Lockhart** and **Kerrie Mengersen** will be stepping down after their three-year terms on Council.

Council is also made up of the Executive Committee members and Editors. From September 8, the Executive Committee will comprise President **Chris Burdzy**, Past President **Regina Liu**, President-Elect **Peter Bühlmann**, Treasurer **Zhengjun Zhang**, Executive Secretary **Edsel Peña**, and **Annie Qu** as the new Program Secretary [see page 4]. **Susan Murphy** will be leaving the Executive after her three-year presidential term, and **Ming Yuan** will also be stepping down, having served as Program Secretary since 2018. The Editors are listed in the panel on page 3; some of their terms are coming to an end this year, and **Xuming He** introduces the incoming editors on page 4.

Thanks to all the Council candidates, to the outgoing members of the committees and Council, and to all of you who voted!



Radu Craiu



Aurore Delaigle



Davar Khoshnevisan



Samuel Kou



Dylan Small



Daniela Witten

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IMS Members' News

IMS Peter Hall Early Career Prize awarded to Tracy Ke

The Peter Gavin Hall Early Career Prize recognizes early-career research accomplishments and research promise in statistics, broadly construed. The 2021 recipient of the Peter Hall Prize is **Zheng Tracy Ke** of Harvard University. She was chosen “for her fundamental theoretical advancements in understanding the Phase Diagrams for several complex modern models including the Rare/Weak signal model, and for her significant contribution in methods and theory for text modeling and network analysis.”

Zheng Tracy Ke's research interests include high-dimensional statistics; machine learning; social network analysis; text mining; and bioinformatics and statistical genetics.



Zheng Tracy Ke

American Academy of Arts and Sciences: Kavita Ramanan

The American Academy of Arts & Sciences has announced the election of 252 new members, among whom is probabilist [and *IMS Bulletin* contributing editor!] **Kavita Ramanan**, Roland George Dwight Richardson University Professor of Applied Mathematics at Brown University. Ramanan has also recently been selected for the 2021 Class of Vannevar Bush Faculty Fellows, the US Department of Defense's flagship single investigator award. Her research topic is “High-dimensional Stochastic Dynamics on Diverse Network Topologies.”

Joseph Romano chosen as NOGLSTP Scientist of the Year

The National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP) has selected **Joseph Romano**, Professor of Statistics and Economics at Stanford University, as its LGBTQ+ Scientist of the Year. An IMS Fellow, Joseph (Joe) Romano is a pre-eminent scholar in statistics and econometrics. He has published over 100 peer-reviewed publications in the areas of resampling, computer-intensive methods for nonparametric inference, and multiple hypothesis testing. These publications, along with three co-authored books, have impacted fields ranging from econometrics to climate science. Romano has developed many new statistical tools, such as subsampling and the stationary bootstrap. One of his letters of support noted that he “pioneered novel uses of randomization tests...[leading to] a renewed interest in their use in economics.” Romano is an advocate for all students and an inspiration to many LGBTQ+ students at Stanford. His advice for the next generation of LGBTQ+ STEM professionals? “Enjoy the process, life is learning, and you are always evolving. Be authentic, patient, and stay in the moment.”

Ulf Grenander Prize: Michael Jordan

The American Mathematical Society's Ulf Grenander Prize in Stochastic Theory and Modeling is awarded to **Michael I. Jordan** for foundational contributions to machine learning (ML), especially unsupervised learning, probabilistic computation, and core theory for balancing statistical fidelity with computation.
https://www.ams.org/news?news_id=6500

Bernoulli Society Willem van Zwet Medal

Maria Eulália Vares has been awarded the inaugural Willem van Zwet Medal for Special Service to the Bernoulli Society as member and chair of the Publications Committee, and editor of *Stochastic Processes and their Applications (SPA)*.
<https://www.isi-web.org/news-newsletter/20596-willem-van-zwet-medal-awarded-to-maria-eulalia-vares>

More Members' News

Fellows of the UK Royal Society announced

Over 60 outstanding scientists from all over the globe have joined the Royal Society as Fellows and Foreign Members. The distinguished group of scientists consists of 52 Fellows, 10 Foreign Members and one Honorary Fellow and were all selected for their exceptional contributions to science.

Among those elected are **Michael Jordan** (Foreign Member), who is a Professor in the Department of Electrical Engineering and Computer Sciences and Department of Statistics, UC Berkeley [*Michael also won the Ulf Grenander Prize: see page 2*]; **Richard Samworth** (Fellow), Professor of Statistical Science and Director at the Statistical Laboratory, University of Cambridge; and **Jeremy Quastel** (Fellow), Professor in the Department of Mathematics, University of Toronto.

Sir **John Kingman** becomes an Honorary Fellow for his unwavering support for science throughout his career. He has been “an important and highly effective force for good for UK science and innovation for many years, through his career in the Treasury, his steering role in the creation of UK Research and Innovation and subsequent chairmanship.”

Sir **Adrian Smith**, the new President of the Royal Society and an IMS Fellow, welcomed the newly elected Fellows and Foreign Members. He said, “The global pandemic has demonstrated the continuing importance of scientific thinking and collaboration across borders. Each Fellow and Foreign Member bring their area of scientific expertise to the Royal Society and when combined, this expertise supports the use of science for the benefit of humanity.”

The complete list is at <https://royalsociety.org/news/2021/05/new-fellows-announcement-2021/>

Noel Cressie named Fellow of the Royal Society of New South Wales

Distinguished Professor **Noel Cressie**, University of Wollongong, Australia, has been named a Fellow of the Royal Society of New South Wales (FRSN). Her Excellency, The Honourable Margaret Beazley AC QC, Governor of New South Wales, a Patron of The Royal Society of New South Wales announced Prof Cressie's election on 9 December 2020. The Royal Society of New South Wales recognizes the substantial contribution made by NSW leaders in their fields in science, art, literature, and philosophy.


Noel Cressie is a statistical scientist who develops world-leading statistical methodology for analyzing spatial and spatio-temporal data and for its application to the environmental sciences. Distinguished Prof Cressie is Director of UOW's Centre for Environmental Informatics in the National Institute for Applied Statistics Research Australia (NIASRA) at the University of Wollongong, Australia

Bernoulli Society New Researcher Awards: Fang Han, Aaditya Ramdas and Anru Zhang

The Bernoulli Society's New Researcher Awards recognize the work of outstanding young researchers who are members of the BS. This year the award was for innovative contributions in the field of Mathematical Statistics. Out of 22 applicants, the award committee chose for the award **Fang Han** (University of Washington), **Aaditya Ramdas** (Carnegie Mellon University) and **Anru Zhang** (University of Wisconsin-Madison). Each of them delivered an invited talk at the Bernoulli Society New Researcher Award Session at the 63rd ISI World Statistics Congress, July 11-16, 2021.


 = access published papers online

IMS Journals and Publications

Annals of Statistics: Ming Yuan, Richard Samworth
<https://imstat.org/aos>
 <https://projecteuclid.org/aos>

Annals of Applied Statistics: Karen Kafadar
<https://imstat.org/aoas>
 <https://projecteuclid.org/aoas>

Annals of Probability: Amir Dembo
<https://imstat.org/aop>
 <https://projecteuclid.org/aop>

Annals of Applied Probability: Francois Delarue, Peter Friz
<https://imstat.org/aap>
 <https://projecteuclid.org/aop>


Statistical Science: Sonia Petrone
<https://imstat.org/sts>
 <https://projecteuclid.org/ss>

IMS Collections
 <https://projecteuclid.org/imsc>


IMS Monographs and *IMS Textbooks*: Nancy Reid
<https://www.imstat.org/journals-and-publications/ims-monographs/>

IMS Co-sponsored Journals and Publications


Electronic Journal of Statistics: Domenico Marinucci
<https://imstat.org/ejs>
 <https://projecteuclid.org/ejs>

Electronic Journal of Probability: Andreas Kyprianou
 <https://projecteuclid.org/euclid.ejp>


Electronic Communications in Probability:
 Giambattista Giacomini
 <https://projecteuclid.org/euclid.ecp>

Journal of Computational and Graphical Statistics:
 Tyler McCormick <https://www.amstat.org/ASA/Publications/Journals.aspx>
 log into members' area at imstat.org

Statistics Surveys: David Banks
<https://imstat.org/ss>
 <https://projecteuclid.org/euclid.ssu>


Probability Surveys: Ben Hambly
<https://imstat.org/ps>
 <https://www.i-journals.org/ps/>


IMS-Supported Journals

ALEA: Latin American Journal of Probability and Statistics: Roberto Imbuzeiro Oliveira
 <http://alea.impa.br/english>

Annales de l'Institut Henri Poincaré (B):
 Grégory Miermont, Christophe Sabot
<https://imstat.org/aihp>
 <https://projecteuclid.org/aihp>


Bayesian Analysis: Michele Guindani
 <https://projecteuclid.org/euclid.ba>

Bernoulli: Mark Podolskij, Markus Reiß
<https://www.bernoulli-society.org/>
 <https://projecteuclid.org/bj>

Brazilian Journal of Probability and Statistics:
 Enrico Colosimo
<https://imstat.org/bjps>
 <https://projecteuclid.org/bjps>

IMS-Affiliated Journals

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

Probability and Mathematical Statistics:
 Krzysztof Bogdan, Krzysztof Debicki
 <http://www.math.uni.wroc.pl/~pms/>

Stochastic Systems: Shane Henderson
 <https://pubsonline.informs.org/journal/stsy>

UPDATED

New Journal Editors

Xuming He is chair of the IMS Committee to Select Editors. He introduces the incoming editors of three of the IMS journals:



Above: K. Ramanan; below: Q. Shao



Above: Ji Zhu



Above: E. Mammen; below: L. Wang



We are pleased to introduce the editors-elect for several IMS flagship journals. Their three-year terms start January 1, 2022.

The Annals of Applied Probability aims to publish research of the highest quality reflecting the varied facets of contemporary applied probability. **Kavita Ramanan** and **Qiman Shao** have been appointed as Editors-elect of the journal. Kavita Ramanan is the Roland George Dwight Richardson University Professor of Applied Mathematics, Brown University. She works on probability theory, stochastic processes and their applications. Qiman Shao, Chair Professor of the Department of Statistics and Data Science, Southern University of Science and Technology, China, works on asymptotic approximations and large deviations in probability and statistics, as well as high-dimensional data analysis.

The Annals of Applied Statistics is a premier journal of applied statistics and aims to provide a timely and unified forum for all areas of applied statistics. Professor **Ji Zhu** from the Department of Statistics, University of Michigan, will succeed Karen Kafadar as Editor-in-Chief. His research interests include statistical learning, complex data analysis, and statistical modeling in a wide range of applications from health/

medicine to finance and engineering. He will appoint several area-editors to assist him with the review process for the journal.

The Annals of Statistics aims to publish research papers of the highest quality reflecting the many facets of contemporary statistics. **Enno Mammen** and **Lan Wang** will succeed Richard Samworth and Ming Yuan as Editors. Enno Mammen is Professor of Mathematical Statistics at Heidelberg University, Germany. His research interests include asymptotic statistical decision theory, the bootstrap methods, and nonparametric models. Lan Wang is Professor of Statistics and Management Science at University of Miami. Her research interests cover optimal personalized decision recommendations, quantile regression, and high dimensional learning and inference.

Incoming IMS Program Secretary

IMS Council approved the appointment of **Annie Qu** as IMS Program Secretary for the term September 8, 2021 to August 14, 2024, as recommended by the Committee to Select Administrative Officers. Annie Qu is Chancellor's Professor in the Department of Statistics at the University of California, Irvine. Her UCI webpage is <https://www.stat.uci.edu/faculty/annie-qu/>

Annie Qu's research focuses on solving fundamental issues regarding structured and unstructured large-scale data, and developing cutting-edge statistical methods and theory in machine learning and algorithms on personalized medicine, text

mining, recommender systems, medical imaging data and network data analyses for complex heterogeneous data. The newly developed methods are able to extract essential and relevant information from large volume high-dimensional data. Her research has impacts in many fields such as biomedical studies, genomic research, public health research, social and political sciences.

Before she joined UC Irvine, Annie Qu was Data Science Founder Professor of Statistics, and the Director of the Illinois Statistics Office, at the University of Illinois at Urbana-Champaign (UIUC). She gained her PhD in Statistics from the Pennsylvania State University. She was awarded the Brad and Karen Smith Professorial Scholar by the College of LAS at UIUC, was a recipient of an NSF Career award in 2004–09, and is a Fellow of IMS and ASA.



Annie Qu

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IMS President introduces Membership Survey

Regina Liu, the current IMS President, wanted to find out more about who IMS members are, what you want, and how the IMS can better serve you. She writes a preamble to the IMS 2021 Membership Survey Report below:

The IMS recently conducted a survey to assess how effective it is in representing our profession, and how it can better serve its members. We are grateful that more than 1800 members have responded to the survey, many with heartfelt comments. We thank those who have responded, and we **would like all members to know that their input is always welcome and valued**, even without the survey.

The survey has collected useful information in providing a broad vision for the IMS to move forward. The survey data has been thoroughly analyzed and thoughtfully summarized in the report prepared by Junhui Cai, Nicole Pashley and Linda Zhao, on pages 6–9.

In the report, two action items stand out:

- 1) **Broader Future Directions:** there is a clear wish from the respondents to see the IMS respond to the unprecedented expansion of our profession to grow in the directions of **machine learning and data science**, broadly defined.
- 2) **Membership Base Expansion:** the data indicate the need for the IMS to strengthen its membership drive effort, to:

- (i) retain its **student members** after graduation and encourage them to participate in the **IMS New Researcher Group (NRG)**,
and
- (ii) recruit more members from **emerging areas of data science, underrepresented groups and from regions outside of North America**.

It is gratifying to see that many have expressed their willingness to volunteer for IMS service. The IMS needs you and would love to know who you are! Please contact Elyse Gustafson (erg@imstat.org) or me (president@imstat.org). We welcome your participation in IMS activities.

There is an oversight that I must apologize for. I had announced at the beginning of the survey that the first 25 respondents would receive a free one-year membership. As it turns out, our survey design was so thorough in protecting data privacy that it would not allow us to identify the respondents at all. I would like to apologize to those first 25 respondents, and, instead, **set aside these 25 free memberships in the IMS gift account for those who are in need of such support**. Please contact Elyse Gustafson, at erg@imstat.org, if you would like to be considered for this gift membership.

This survey would not have been possible without the time and effort of many volunteers. In particular, I would like to thank Jean Opsomer, Nicole Pashley and Nicole Lazar for their meticulous efforts in designing the survey, Elyse Gustafson for her gentle yet persistent nudging to encourage responses, and Junhui Cai, Nicole Pashley and Linda Zhao for their excellent survey report, presented on the following pages of this issue.

Regina Liu

IMS President 2020–2021
president@imstat.org

Claim one of 25 free IMS gift memberships

If you need financial support, please write to Elyse Gustafson to ask to be considered for a free IMS gift membership (see Regina's article for details...)



2021 IMS Membership Survey: Report

Junhui Cai (UPenn), Nicole E. Pashley (Rutgers) and Linda Zhao (UPenn) report on the results of the recent survey of IMS members:

IMS conducted a survey of members in March and April 2021. It is the second membership survey of this kind after the first one conducted at the end of 2013 and published in 2014 (Opsomer, 2014). The goal of the survey is to assess how the IMS represents the members of our profession, and how it can better serve its members. In addition, our community has experienced an unprecedented period of growth in recent years, leading to possible shifts in IMS member demographics. Interested readers are encouraged to see our full report at http://jh-cai.com/docs/IMS_Survey_full.pdf, which provides more details and graphs, including for questions related to member preferences for events and communications.

The survey was sent to 4,697 members who opted in to receive emails (among all 4,287 active regular members and 621 life members, in total 4,908 members) and 1,861 responded. The previous survey in 2013 was sent to 4,561 active members, and 1,492 responded. The response rate increased from 33% in 2013 to 40%.

Overall, IMS has seen exciting growth in student members. Compared with the 2013 survey, more respondents are working in applied areas. Further, the most popular area for the respondents to work in is statistics, followed by data science/machine learning, and then probability. The background of the respondents is diverse, though primarily academics and students. The majority of respondents have PhDs. There are indications that the international presence of IMS has seen some increase in recent years. Unfortunately, the gender gap among the respondents has seen a backward trend, with males representing a much larger proportion of respondents than females (4-to-1 male vs. female).

The analyses and results are post-stratified by student status, as done in the previous survey analysis. We make no other attempts at creating survey weights and non-responses for questions are removed.

Demographics: Education, age, gender, and geography

First, we examine the educational background of the respondents. Table 1 shows the percentage of the highest degree obtained by decade during which that degree was obtained, among the respondents who reported both the highest degree and decade. Given the nature of IMS, it is not surprising that PhDs dominate, although the proportion has declined since 2013. The higher proportion of masters and undergraduates in the most recent decades (2010s and 2020s), is likely due to individuals still pursuing their education. Figure 1 shows the comparisons between the 2013 and 2021 survey of the highest degree obtained.

Table 1: Percentage of respondents with the highest degree obtained by decade.

Degree	1960s/ prior	1970s	1980s	1990s	2000s	2010s	2020s	All
Doctorate	4.0	7.9	10.4	11.2	13.1	14.9	4.8	66.2
Masters	0.2	0.1	0.2	0.4	1.3	18.0	5.0	25.1
Undergraduate	0.0	0.1	0.1	0.1	0.0	5.6	2.7	8.7
All	4.2	8.1	10.6	11.7	14.4	38.5	12.5	100.0

Figure 1: Distribution of highest degree obtained comparing the 2013 and 2021 survey.

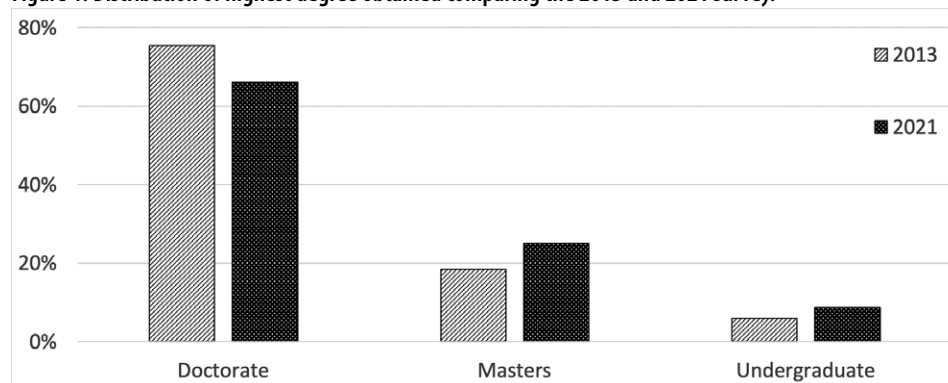


Table 2 [right] shows the difference in the geographic distribution of respondents by continent they spend most of their time in between the 2013 and 2021 survey. The number of respondents in Asia has seen a dramatic increase. The number in Asia is now larger than the number in Europe. The percent of respondents in Africa also almost doubled since 2013.

Table 2: Geographic distribution of respondents comparing the 2013 and 2021 survey.

Continent	2013 (%)	2021 (%)
Africa	1.7	3.3
Asia	12.5	21.4
Europe	20.0	16.5
North America	61.1	55.2
Oceania	3.4	2.1
South America	1.3	1.4

Figure 2 [next page] shows the percentage of respondents by age and gender among those who reported both age and gender. Gender is highly skewed towards males, close to

4-to-1 male vs. female overall. The balance was improving for the younger members in the 2013 survey, approaching 2-to-1 among respondents in their 20s and below. However, the improving balance scaled back to close to 3-to-1 in the 2021 survey, with the most imbalance from Africa, South America, and Oceania, followed by Europe, Asia, and North America. As a reference point, the ASA in 2016 reported about 34.6% female and 65.4% male members, of the 85.2% of members that disclosed their gender (Ghosh-Dastidar, B., Tolpadi, A., & Stangl, D., 2016).

Approximately (unweighted) 3.2% of respondents chose not to disclose their gender (including non-response to the question), identified as non-binary, or chose to self-describe.

A noteworthy change in the age distribution from 2013 to 2021 is an increase in the proportion of respondents in their 20s and younger (from 18.1% in 2013 to 27.6% now). **Figure 3** shows these numbers broken up by student status. Unsurprisingly, student respondents tend to be younger than non-student respondents.

Professional activities: Occupation, Primary field, and New Researchers Group

Table 3 [right] shows the current employment status of the respondents, again broken down by decade of degree and among those who reported employment status and decade of degree. Approximately 48% of the respondents are employed by academic institutions and close to 35% are post-docs or students (recall these numbers are post-stratified by student status based on true proportion of student members in IMS). Comparing the employment status to that in the 2013 survey, as shown in **Figure 4** [right], the concentration in academia is even higher in 2021 and student membership accounts for over 30% of total members, up from about 20% in 2013.

Continues on next page

Figure 2: Percentage of respondents by age and gender comparing the 2013 and 2021 survey

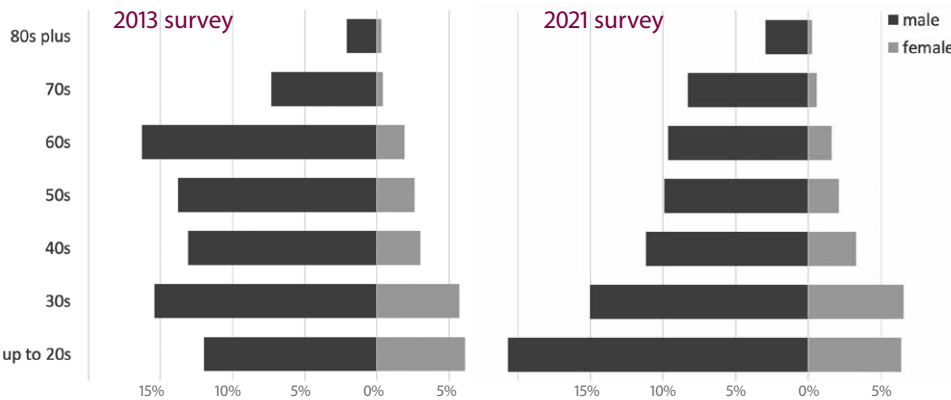


Figure 3: Percentage of 2021 respondents by age and gender, broken down by student status

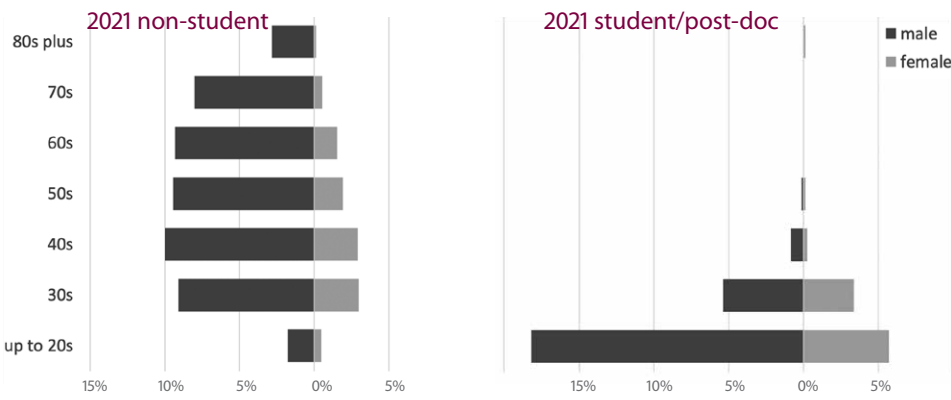


Table 3: Distribution of current occupation by decade of highest degree earned.

Occupation	1960s/ prior	1970s	1980s	1990s	2000s	2010s	2020s	All
Academic	1.0	2.8	7.8	10.1	12.4	13.1	1.3	48.4
Private	0.1	0.2	0.5	0.6	0.7	1.2	0.8	4.2
Government	0.0	0.2	0.1	0.4	0.3	0.5	0.1	1.6
Retired	3.0	4.3	1.9	0.4	0.0	0.1	0.0	9.8
Postdoc	0.0	0.0	0.0	0.0	0.0	1.3	1.0	2.3
Student	0.0	0.0	0.0	0.1	0.8	21.4	9.8	32.2
Others	0.0	0.5	0.3	0.1	0.2	0.4	0.1	1.7
All	4.1	8.0	10.6	11.7	14.3	38.1	13.3	100.0

Figure 4: Distribution of current occupation comparing the 2013 and 2021 survey.

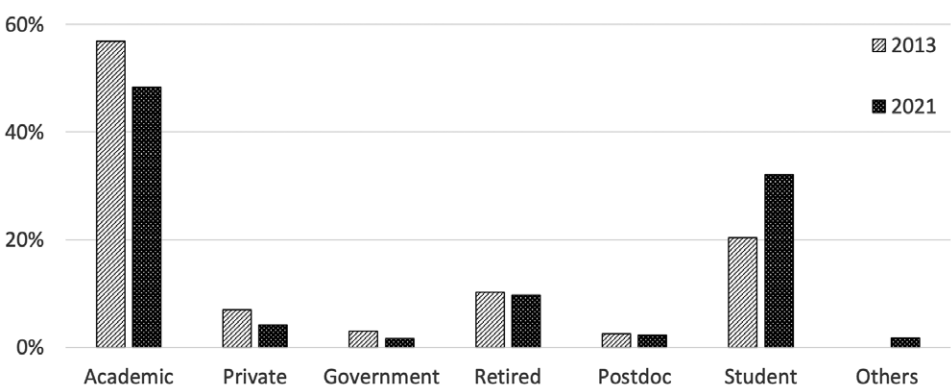


Table 4: Distribution of respondents by primary field including statistics (theory, methodology or applied) and by primary field including probability (theory or applied). Numbers are percentages.

		Statistics		
		Yes	No	All
Probability	Yes	17.5	11.3	28.8
	No	64.0	7.2	71.2
	All	81.5	18.5	100.0

We now turn to the primary area(s) of research or professional activity reported by the respondents. In addition to the four broad categories from the 2013 survey—applied statistics, statistical theory, probability theory and applied probability—the 2021 survey introduced two new categories of “statistical methodology” and “data science and/or machine learning.”

Table 4 shows that over 80% of respondents work in statistics (statistical theory, statistical methodology, or applied statistics), similar to the 2013 survey. The proportion who also identify probability as one of their primary fields, in addition to statistics, jumped from 9.0% in 2013 to 17.5% in 2021. However, the proportion of respondents who work in probability and not statistics remains low at around 11.3% (compared to 13.7% in 2013). Tables showing the mix of research in probability or statistics vs data science and/or machine learning among respondents are available in the full report and are summarized here. Data science and/or machine learning is booming and currently 41% of respondents identify it as one of their primary fields. Over 40% of those who work in statistics indicate that they also work in data science; however, less than a third of those who work in probability do so.

Tables 5 and 6 [above center & right] show the proportion of respondents who work in applied areas of statistics or

Table 5: Distribution of respondents by primary field including applied statistics and by primary field including statistical theory or statistical methodology. Numbers are percentages.

		Statistical theory/methodology		
		Yes	No	All
Applied statistics	Yes	38.2	14.4	52.6
	No	28.9	18.5	47.4
	All	67.1	32.9	100.0

probability. Among those who work in statistical theory and/or methodology, more than half also work in applied statistics, a big jump from 35% in the 2013 survey. Similarly, among those who work in probability theory, almost half also work in applied probability, a surge from less than a quarter in 2013. In fact, more respondents now indicate that they work in applied probability than in probability theory. These trends indicate an increased focus and appreciation of applied work in both statistics and probability.

The IMS New Researchers Group (NRG, <http://groups.imstat.org/newresearchers/>) “focuses on ensuring the continuance of the New Researchers Conference, the establishment and enhancement of a robust web presence, and fostering new ways for young researchers to meet, collaborate, and share their experience” (from <http://groups.imstat.org/newresearchers/about.html>). The NRG invites all members within 10 years of their PhD to join. Unfortunately, less than 25% of the applicable respondents were aware of NRG at the time of the survey. We hope this survey will help spread awareness and further the NRG’s mission of engaging with and empowering new researchers.

How to better serve the members?

New questions were introduced on this survey to assess how IMS can better serve its members. We now turn to the preferred methods members use to get statistical news and updates. 97% of the respondents answered this question and the general results are given in Figure 5. The most popular platform used to receive statistical news is the *IMS Bulletin* followed by attending conferences and other statistical organizations’ newsletters. Perhaps surprisingly given their general popularity, Twitter and blogs are the least likely to be a typical source of statistical news for respondents.

Figure 5: Platforms respondents typically use to learn about statistical news and updates.



To understand how to better engage with younger and more junior members, a separate analysis of this data was performed, separating individuals who indicated that they are potential NRG members (within 10 years of their PhD) and all others. We will refer to the potential NRG members as “new researchers.” Unsurprisingly, the new researchers show a relatively higher preference for Twitter and blogs as sources of news, but they are still the least likely sources among both groups. For both groups the *IMS Bulletin* and attending conferences are the two most common ways of learning about statistical news, but with the non-new researchers group being more likely to use the *IMS Bulletin* as a source.

An important note here is that there is some obvious selection bias: individuals who read the *IMS Bulletin* and other IMS emails are those who were the most likely to respond to this survey.

The survey also included a question regarding which future events members are most interested in IMS holding or sponsoring. The results are shown in **Figure 6**. 86% of the respondents answered this question. The most popular event type is statistical or data science workshops, followed by virtual events and interdisciplinary events. Focused interest area conferences had the least interest.

A second analysis was also done splitting the data by whether the respondent is a potential NRG member. This breakdown shows that statistical or data science workshops are most popular among both groups. However, new researchers appear more interested in focused interest area conferences and less interested in virtual events.

We now do an informal look at the responses to open-ended comments on the survey. A very informal classification of the comments shows several themes emerge. The five most common themes are as follows: **1.** Encouragement and suggestions to continue virtual and online events; **2.** General praise for IMS; **3.** Support and suggestions for engaging with data science, machine learning, and AI more; **4.** Encouragement to support and engage with young researchers and students; **5.** Encouragement to provide more support for members in developing countries.

Final remarks

This survey has given us more insights into who IMS members are. It shows that our members are diverse in interests, with clear trends over time towards applied areas and data science/machine learning among respondents. IMS appears to be increasing in international presence, especially in Asia

Figure 6: Events respondents are interested in IMS holding or sponsoring.



and Africa. Respondents continue to be primarily in academic positions with PhDs, perhaps pointing to more opportunities to bring in members from other backgrounds. Respondents indicated the usefulness of the *IMS Bulletin* and showed enthusiasm for future IMS events. Excitingly, IMS has increased in student and younger members. The gender imbalance among the respondents in some regions should motivate new efforts in outreach to under-represented members of our fields, especially juniors.

On a final note, Figure 7 [below] is a word cloud of the 300 open ended comments received. Some common words are unsurprising, such as “members,” “statistics,” and “probability,” but we are happy to see among their ranks “good,” “thank,” and “like.”

Thank you to all the members who took the survey.



Call for invited session proposals for the 2022 IMS Annual Meeting

The 2022 IMS Annual Meeting will be held in London, UK, June 27-30. We invite proposals for invited sessions in probability and statistics. There are 15 slots in probability and 15 in statistics to be filled as a result of this open call. To propose an invited session, you will need a session title and a short description (maximum 300 characters). You will need to provide details of the session organizer (i.e. you), the chair and four speakers. Each speaker will have 30 minutes, including Q&A.

Session proposals will be judged on importance, novelty, impact and timeliness. In addition, a good session proposal, although containing talks on a common theme, will be diverse in its outlook and participant line-up.

Proposal submission will close on September 1, 2021. Acceptance decisions will be made by October 1.

To submit your session proposal, please complete the form at <https://www.imsannualmeeting-london2022.com/call-for-proposals>.

Probability and Mathematical Statistics: new Editors

Probability and Mathematical Statistics is an IMS-affiliated journal, based at the University of Wrocław and Wrocław University of Science and Technology, in Poland. Founded in 1980, it is now under new editorship. The new Editors are **Krzysztof Bogdan**, Wrocław University of Science and Technology, and **Krzysztof Debicki**, University of Wrocław.

The Associate Editors are: Marek Bozejko, University of Wrocław; Dariusz Buraczewski, University of Wrocław; Krzysztof Burdzy, University of Washington; Anna Dudek, AGH University of Science and Technology; Piotr Fryzlewicz, London School of Economics; Adam Jakubowski, Nicolaus Copernicus University in Torun; Jiming Jiang, University of California, Davis; Zbigniew Jurek, University of Wrocław; Piotr Kokoszka, Colorado State University; Tomasz Komorowski, Institute of Mathematics Polish Academy of Sciences; Mateusz Kwasnicki, Wrocław University of Science and Technology; Mikhail Lifshits, St Petersburg State University; Blazej Miasojedow, University of Warsaw; Jan Mielniczuk, Institute of Computer Science Polish Academy of Sciences; Marek Musiela, Oxford-Man Institute of Quantitative Finance; Krzysztof Oleszkiewicz, University of Warsaw; Adam Osekowski, University of Warsaw; Jan Rosinski, University of Tennessee; Tomasz Rychlik, Institute of Mathematics Polish Academy of Sciences; Gennady Samorodnitsky, Cornell University; Rene Schilling, TU Dresden; Suhasini Subba Rao, Texas A&M; Wladyslaw Szczotka, University of Wrocław; Jacek Wesolowski, Warsaw University of Technology; Wojbor Woyczynski, Case Western Reserve University; and Jie Xiong, Southern University of Science and Technology.

The journal welcomes high-quality submissions in all branches of modern probability and mathematical statistics, including at their intersection. The editors strive to be constructive in their feedback and prompt in their decisions.

More information can be found at <https://www.math.uni.wroc.pl/~pms/> or by contacting the editors.

NOMINATE AN IMS SPECIAL LECTURER

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

The IMS Committee on Special Lectures is accepting nominations for:

- the 2023 & 2024 Wald Lectures
- the 2023 Blackwell Lecture
- the 2023 Wahba Lecture
- the 2024 Medallion Lectures (eight awards)

Send your nomination by October 1, 2021. Information on all lectures is available at <https://www.imstat.org/ims-special-lectures/>

Radu's Rides: Θ *OUCH*, to be young again!

Contributing Editor Radu Craiu shares some concerns about the impact of the pandemic on young researchers:

By the time we start to grasp what it means to be young, the youth itself is gone. Whether it drowns in too much truth or too many compromises matters less than the realization that it is both precious in its frailty and awesome in its impetuosity. The pandemic, in its indiscriminate ability to dull spontaneity, has exacerbated youth's vulnerability and stifled its creativity. Our department has welcomed in July 2020 six new faculty members who, at the time of writing, have still not had a chance to meet their colleagues. Throughout the year, we have glimpsed our graduate students' lives momentarily on small screens, all involved parties equally frustrated to perform a task that was never meant to be solitary. Some of our graduating Master students have already said goodbye to the University (or the country) that granted their degree and that they never visited. Our PhD students are re-enacting some torture scenario from medieval times, in which one is trying to figure out the mathematical solution to a difficult problem while stuck, figuratively *and* literally, in a small chamber that no others dare visit for more than a few minutes per day, week or months. I never thought I would miss the inhalation of chalk dust this much.

And let's remind ourselves that life before Covid was already not a walk in the park for our discipline's neophytes. A couple of years ago, they were entering a community that seemed to double its size every year, whose research output was reaching ridiculous levels, in all directions and many possible senses, whose cohesion was increasingly fractured and whose benchmarks for and paths towards success were rapidly shifting.

When you enter the common room at the University of Chicago's Department of Statistics, you are met with the Wall of Fame: black and white photos of all the former Department Chairs. You may be surprised to see that Patrick Billingsley appears in his photo in a sort of pirate shirt, sporting a mysterious, yet contagious smile. In some of my darkest days as a graduate student, when things were not going as well as I would have liked, I used to go and look at that photo in an (mostly futile) attempt to take in some of the joyful devil-may-care spirit that it exudes. The contrast between reality and the photo's vibe is even more striking now than it was twenty years ago, as no discernible daredevil spirit imbues the contemporary zeitgeist. Instead,

the latter is defined by widespread risk aversion imposed by multiple hoops one needs to jump through before a career is launched, the paucity of grants that seem to discount the augmented cost of living and the size of our scientific communities, and a level of ultra-specialization that sends shivers of self-doubt down many a graduate's spine.

A year of pandemic restrictions has taken away most of the good things our young colleagues could still count on and replaced them with a nagging feeling that professional opportunities are zooming by. While senior researchers can afford to spend some of the considerable social and professional capital they have accumulated during kinder times, those entering the profession in the Covidian Era are quickly depleting theirs and face the possibility of being forgotten before they even have a chance to impress. Add to that the pressures accompanying the responsibility of caring for out-of-school young children or vulnerable elders and you may glimpse the thorny situation I am only sketching here.

Some might say that this is generally true about all disciplines, and I will agree, but with the important addendum that most other disciplines are a lot more "settled" than ours. This difference is important, because the way we treat our young colleagues will set the tone for future years in important ways. Will we develop an empathetical community, or rather opt to strengthen the survival-of-the-fittest model in which "fitness" is not necessarily defined by professional strength but rather the ability to slalom through an unprecedented set of challenges, which may not be correlated with level of expertise or intellectual abilities? This is an important test for all of us who are at a more advanced career stage, for university leaders, and for professional organizations such as IMS.

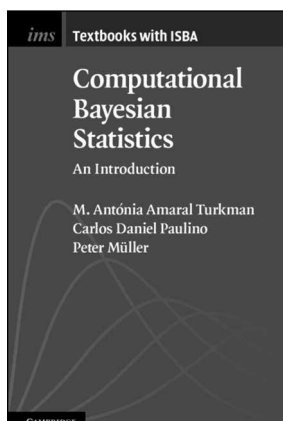
The Institute sponsors several journals and conferences. While the main criteria for funding must always be the importance of the topic and the quality of the output, more attention can be given to ensure that visibility is not showered only on those who already have it. We can all repair some of the fractures produced by the last year, by letting our young colleagues take on that invitation to speak, by nominating them for an honour, by including them in a team grant, or by adding them to promising research projects for which they have the necessary training. Sometimes, bigger effects come from the simplest gestures: the ability to listen and commiserate, the willingness to share our own failures and setbacks, rather than to brag about accomplishments and honours. We may be tempted to think that we are all swimming in the same murky puddle, but it is worth remembering that some are having a harder time seeing the light.

Consider nominating a younger colleague for the IMS Peter Hall Early Career Prize or the Tweedie New Researcher Award, or encourage them to apply for an IMS Travel Award or the Lawrence D. Brown PhD Student Award.
Deadlines & requirements: <https://imstat.org/ims-awards/>



The Institute of Mathematical Statistics presents

IMS TEXTBOOKS



Computational Bayesian Statistics: An Introduction

M. Antónia Amaral Turkman, Carlos Daniel Paulino, and Peter Müller

Meaningful use of advanced Bayesian methods requires a good understanding of the fundamentals. This engaging book explains the ideas that underpin the construction and analysis of Bayesian models, with particular focus on computational methods and schemes. The unique features of the text are the extensive discussion of available software packages, combined with a brief but complete and mathematically rigorous introduction to Bayesian inference. The text introduces Monte Carlo methods, Markov chain Monte Carlo methods, and Bayesian software, with additional material on model validation and comparison, trans-dimensional MCMC, and conditionally Gaussian models. The inclusion of problems makes the book suitable as a textbook for a first graduate-level course in Bayesian computation with a focus on Monte Carlo methods. The extensive discussion of Bayesian software—R/R-INLA, OpenBUGS, JAGS, STAN, and BayesX—makes it useful also for researchers and graduate students from beyond statistics.

"This book aims to be a concise introduction to modern computational Bayesian statistics, and it certainly succeeds! The authors carefully introduce every main technique that is around and demonstrate its use with the appropriate software. Additionally, the book contains a readable introduction to Bayesian methods, and brings the reader up to speed within the field in no time!"
Håvard Rue, King Abdullah University of Science and Technology, Saudi Arabia

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Cambridge University Press, with the Institute of Mathematical Statistics, established the *IMS Monographs* and *IMS Textbooks* series of high-quality books. The series editors are Nancy Reid (Coordinating Editor, 2018–2021), Ramon van Handel (Probability, 2018–2021), Arnaud Doucet (Algorithms, 2020–2023) and Xuming He (Statistics, 2017–2020).

Recent papers: two IMS-supported journals

Bayesian Analysis

Bayesian Analysis is an electronic journal of the International Society for Bayesian Analysis. It seeks to publish a wide range of articles that demonstrate or discuss Bayesian methods in some theoretical or applied context. The journal welcomes submissions involving presentation of new computational and statistical methods; critical reviews and discussions of existing approaches; historical perspectives; description of important scientific or policy application areas; case studies; and methods for experimental design, data collection, data sharing, or data mining. The Editor-in-Chief is Michele Guindani (UC Irvine). Access papers at <https://projecteuclid.org/journals/bayesian-analysis>

Volume 16, No 1, March 2021

A Bayesian Hierarchical Model for Criminal Investigations	F. O. BUNNIN AND J. Q. SMITH; 1
On a New Class of Multivariate Prior Distributions: Theory and Application in Reliability	F. RUGGERI, M. SÁNCHEZ-SÁNCHEZ, M. Á. SORDO, AND A. SUÁREZ-LLORENS; 31
Where Is the Clean Air? A Bayesian Decision Framework for Personalised Cyclist Route Selection Using R-INLA	L.C. DAWKINS, D.B. WILLIAMSON, K.L. Mengersen, L. MORAWSKA, R. JAYARATNE, AND G. SHADDICK; 61
On the Existence of Uniformly Most Powerful Bayesian Tests With Application to Non-Central Chi-Squared Tests	A. NIKOOIENEJAD AND V. E. JOHNSON; 93
Comparison of Bayesian and Frequentist Multiplicity Correction for Testing Mutually Exclusive Hypotheses Under Data Dependence	S. CHANG AND J. O. BERGER; 111
Objective Bayesian Analysis for the Student-t Linear Regression	D. HE, D. SUN, AND L. HE; 129
Parallel Gaussian Process Surrogate Bayesian Inference with Noisy Likelihood Evaluations.	M. JÄRVENPÄÄ, M. U. GUTMANN, A. VEHTARI, AND P. MARTTINEN; 147
A Phase I–II Basket Trial Design to Optimize Dose–Schedule Regimes Based on Delayed Outcomes	R. LIN, P. F. THALL, AND Y. YUAN; 179
Using Prior Expansions for Prior–Data Conflict Checking	D. J. NOTT, M. SEAH, L. AL-LABADI, M. EVANS, H. K. NG, AND B.-G. ENGLERT; 203
Dynamic Variable Selection with Spike-and-Slab Process Priors	V. ROCKOVA AND K. MCALINN; 233
A Model Selection Approach for Variable Selection with Censored Data.	M. E. CASTELLANOS, G. GARCÍA-DONATO, AND S. CABRAS; 271
Centered Partition Processes: Informative Priors for Clustering (+ Discussion)	S. PAGANIN, A. H. HERRING, A. F. OLSHAN, D.B. DUNSON, AND THE NATIONAL BIRTH DEFECTS PREVENTION STUDY; 301

Brazilian Journal of Probability and Statistics

The *Brazilian Journal of Probability and Statistics* is an official publication of the Brazilian Statistical Association and is supported by the IMS. The Journal publishes papers in applied probability, applied statistics, computational statistics, mathematical statistics, probability theory and stochastic processes. The Editor is Mário de Castro. Access papers at <https://projecteuclid.org/journals/brazilian-journal-of-probability-and-statistics>

Volume 35, No 2, May 2021

The local principle of large deviations for compound Poisson process with catastrophes.	A. LOGACHOV, O. LOGACHOVA AND A. YAMBARTSEV; 205
A switch convergence for a small perturbation of a linear recurrence equation.	G. BARRERA AND S. LIU; 224
Finite-memory elephant random walk and the central limit theorem for additive functionals	I. BEN-ARI, J. GREEN, T. MEREDITH, H. PANZO AND X. TAN; 242
Angle distribution of two random chords in the disc: A sine law	J. I. H. BARAHONA-TORRES, P. C. MANRIQUE-MIRÓN AND E. TREVIÑO-AGUILAR; 263
The minimal observable clade size of exchangeable coalescents	F. FREUND AND A. SIRI-JÉGOUSSE; 281
Modeling \mathbb{Z} -valued time series based on new versions of the Skellam INGARCH model.	Y. CUI, Q. LI AND F. ZHU; 293
Estimation of semiparametric models with errors following a scale mixture of Gaussian distributions	M. M. TADDEO AND P. A. MORETTIN; 315
On a transform for modeling skewness	L. KANG, P. DAMIEN AND S. WALKER; 335
On multivariate selection scale-mixtures of normal distributions.	R. ROOZEGAR, N. BALAKRISHNAN, A. BEKKER AND A. JAMALIZADEH; 351
Efficient estimation of the odds using judgment post stratification	M. ALIREZAEI DIZICHEH, E. ZAMANZADE AND N. IRANPANAH; 375
Bayesian estimation of a decreasing density	G. JONGBLOED, F. VAN DER MEULEN AND L. PANG; 392
A Bayesian nonparametric estimation to entropy	L. AL-LABADI, V. PATEL, K. VAKILOOYAEI AND C. WAN; 421

Anirban's Angle: More Questions than Answers

Anirban DasGupta has *So. Many. Questions*. He invites your answers: send your thoughts and comments (and maybe more questions!) to bulletin@imstat.org or leave a comment on the online version at imstat.org/news.

Like a slightly impetuous, though scrupulous, young man of the teenage revolutionary kind, I am listing today an abundance of questions that more or less just occurred to me. I wish I could make at least a small fraction of *IMS Bulletin* readers spend a moment thinking about a few of them, if these questions have a nanoscopic grain of seriousness.

I do not have probable answers to most of them. Maybe you do...

1. Should PhD students in a statistics department be required to know any mathematics beyond high school algebra, two semesters of calculus, and one semester of matrix calculations? If yes, what?
2. Should statistics departments give a common degree of PhD in statistics, or separate degrees of PhD in perhaps applied statistics, data science, biostatistics, algorithms and graphics?
3. Should there be a qualifying exam for PhD students in statistics? If yes, should it be a common qualifying exam for all students, or separate exams for separate areas?
4. If there are qualifying exams, how many chances should a student get to pass it? One, two, three? Infinite?
5. Should there be some external evaluation of PhD dissertations in statistics, such as reports by anonymous experts chosen by the university?
6. Should graduate school include two semesters of ethics and integrity classes?
7. Should we teach PhD students any finite sample optimality theory for given parametric models? Or, abandon it? How soon should they learn asymptotics? Should they be required to learn Bayes theory?
8. Alternatively, should we instead start our theory classes with model-free omnibus methods, such as the bootstrap?
9. Should students see proofs? Which proofs?
10. Should PhD students in statistics be required to know more probability than probability at the Hogg and Craig level? If yes, should we mandate theory of stationary Markov chains, random walks, martingales, Brownian motion, renewals, counting processes, diffusions, large deviations, Itô theory? Which ones?
11. Should PhD students in statistics be mandated to take classes in the CS department? In the math department? In the engineering school?
12. As a policy, should hiring committees be appointed, elected, or selected by a public closed-box random selection?
13. Should promotion committees be appointed, elected, or selected by a public randomization?
14. Should admission committees be appointed, elected, or selected by public randomization?
15. Should personnel committees be appointed, elected, or selected by public randomization?
16. Should hiring decisions be made by executives, or Qualtrics surveys, or a public vote counted by a set of faculty members?
17. Generally, should tenures of department heads be limited to at most three or four years, with no renewals?
18. Should departments maintain a physical room with recent publications of its faculty on display in shelves and racks and all receptions held in that room?
19. Should annual raises pass a test of uniformity with a p -value of .10 or so?
20. How about Gallup-like tracking polls of the approval rating of department heads among faculty members and PhD students?
21. Should department heads usually teach?
22. Should citations be considered at all? If yes, how? Total number? Average? Top five?
23. Should there be a list of statistics journals in which a faculty member *must* publish as a rule to get tenured, or promoted?
24. Should faculty members who are editors be automatically given teaching reduction?
25. And, finally, should faculty members be required to make good jokes?

Since 25 is the only multiple of five below 100 that is also a perfect square, this seems to be a good place to stop. Now this was astuteness in clean lines.

Statistical Significance and Replicability

During her 2019 term as ASA President, Karen Kafadar (who is now Editor-in-Chief of the *Annals of Applied Statistics*) convened a Task Force to address issues surrounding the use of p -values and statistical significance, as well as their connection to replicability. The report from the task force and Karen's Editorial will be published in the September 2021 issue of the *Annals of Applied Statistics*: see the first two items currently listed at <https://imstat.org/journals-and-publications/annals-of-applied-statistics/annals-of-applied-statistics-next-issues/>. Karen explains the background to these articles:

The debate about the value of hypothesis testing, and the over-reliance on p -values as a cornerstone of statistical methodology, started well over a century ago, and it continues today. Statisticians and researchers have commented on their use... and their abuse. In March 2019, *The American Statistician* devoted a special issue to this topic; the opening Editorial stated, "It is time to stop using the term 'statistically significant' entirely. Nor should variants such as 'significantly different,' ' $p < 0.05$,' and 'nonsignificant' survive." The Editorial was co-authored by the Executive Director of the American Statistical Association (ASA) without a disclaimer and was distributed widely to other journals; its authors subsequently made numerous presentations, and many presumed the Editorial represented ASA policy. The reactions ranged from surprise to confusion to complete distrust of all statistical methods: if hypothesis tests are not valid, why should anyone trust statisticians?

Nowhere does the 19-page Editorial imply that hypothesis tests and p -values are invalid. But the perception has persisted: recently, a legal scholar from the Federal Judicial Center asked three statisticians, "Can you tell us what to do now that ASA has stated that we're not supposed to rely on significance tests and p -values to evaluate scientific evidence in legal cases?"

The reputation of our profession, and decades of dedicated efforts to ensure mathematically sound principles of statistical practice, now seemed at stake. As ASA President in 2019, I did not know how to respond to these researchers, except to remind them that the ASA does not endorse any article, written by any author, in any journal—even those that the ASA itself publishes. (Neither does the IMS, or any professional society.) As the questions kept coming, I decided that the best response could come from luminaries in our profession whose credentials are above criticism. And so the Task Force was formed.

Its co-chairs (Xuming He, Linda J. Young) and I (ex-officio) were joined by twelve highly-respected statisticians with much experience in both theoretical foundations and applications across multiple fields. The Task Force included

former, current, or future Presidents from IMS (three), ISI (two), and ASA (three); nine former or current journal editors; and 15 former or current Associate Editors of statistical and scientific journals. With the expressed intention to keep the Task Force Statement short (so people would read it), members worked diligently and considered carefully every single word in it—often dismissing multiple synonyms that, in their collective view, did not express exactly what the statement should say. It is hard for me to overstate my heartfelt thanks to all of them, for the hours of video conference calls and hundreds of emails that we exchanged. (One member counted *45 messages about one word alone*.) All recognized the importance of valid statistical methods in scientific research and the role that such a statement could play to assure its place in science.

Our profession experienced an unexpected vote of confidence during the pandemic year of 2020, as researchers turned to us for modeling the spread of Covid-19, for legitimately questioning so-called "research" on the use of hydroxychloroquine to suppress the SARS-CoV-2 virus, for design of clinical trials to test the efficacies of vaccines, and for evaluation of vaccine safety before release. Speaking about the latter on the PBS NewsHour on 23 November 2020, Dr. Anthony Fauci assured the public that:

"The decision of whether or not a vaccine is safe and effective, that is made by a completely independent group, not by the federal government, not by the company. It's made by an independent group of scientists, vaccinologists, ethicists, **statisticians**. They do that independently."

(My emphasis: see <https://www.pbs.org/newshour/show/fauci-thanksgiving-gatherings-will-put-families-at-risk>)

The Task Force Statement does not aim to discourage development of new methodologies, but we hope that our well-researched and theoretically sound statistical methodology is neither abused nor dismissed categorically. I hope that the Task Force Statement will successfully communicate the importance of statistical inference and the proper interpretation of p -values to our scientific partners and science journal editors in a way they will understand and appreciate, and can use with confidence and comfort. My thanks to the IMS for publicizing the Task Force Statement, and especially to the Task Force members. I learned much from all of them during our meetings, and I can only hope that they enjoyed the experience in preparing the Statement as much as I did.

The War on Statistical Significance

Arguably, a properly computed p -value in a scientific research study is a measure of the *weight of evidence* of the existence of a studied “effect” in the population under study. (An effect is often sensibly viewed as a relationship between variables.) The p -value is one of many available measures of the weight of evidence of the existence of an effect, which include the confidence interval, likelihood ratio, Bayes factor, and others. There are many measures because measuring this weight is a fundamental scientific problem, so many thinkers have devised approaches.

If we examine the operation of the standard measures of the weight of evidence for the existence of an effect in a typical research study, we see that the values of these measures are all monotonically related to each other. This is because, with other things constant, the values are all monotonically related to the estimated effect size.

Therefore, we could calibrate the measures to behave equivalently. Such calibration generally isn’t of practical use. But it is theoretically important because it implies that we can use any one of the measures and it will behave like the others, though with a different measurement scale.

What is the use of the measures of the weight of evidence? Clearly, we *can’t* use them to decide whether an effect exists in a population because they all make false-positive and false-negative errors. However, the measures are useful in a narrower sense—a journal can use one of the measures to define a necessary *gateway* that a research paper must pass through before the journal will *consider* the paper for publication.

The journal defines the concept of “enough weight of evidence” in terms of a *threshold value* for a measure of the weight of evidence, such as a threshold p -value of 0.05 or 0.01. To be accepted for consideration, a paper must report that the value of the journal’s preferred measure of the weight of evidence, as properly computed from the research data, is *beyond the journal’s threshold value*—i.e., the result is *statistically significant*. This ensures that a paper is reporting enough weight of

evidence to imply that the studied effect has a good chance of truly existing in the population.

A journal can’t sensibly *ignore* the weight of evidence because papers that may be reporting mere noise in data (i.e., statistically *non-significant* results) are abundantly available but are generally uninteresting and, if misinterpreted, are misleading. So, arguably, a journal must assess the weight of the evidence reported in each submitted paper and only consider papers with enough weight.

Of course, the weight-of-evidence gateway isn’t the *only* gateway that a submitted paper must pass through to be published in a scientific journal. A paper must also pass through a journal’s gateways of (a) “enough likely reader interest” and (b) “enough quality” before a journal will publish the paper. Both these gateways are obviously highly important, and the quality gateway is multifaceted, at the journal’s discretion.

The weight-of-evidence gateway is useful because the choice of the threshold value acts as a control knob to sensibly *balance* the long-run rates of false-positive and false-negative errors the journal makes in accepting or rejecting papers for consideration for publication. False-positive errors are costly because they lead to a waste of resources as other researchers try to use or replicate the published false-positive results (the “replication crisis”). False-negative errors are costly because the unpublished false-negative results lead to a loss of information for society and a loss of reward for the researcher.

Balancing the two error rates helps a journal to maximize the long-run scientific and social *benefit* of the research papers the journal publishes. Importantly, this helps the journal to maximize its scientific and social contribution.

A new book by Donald B. Macnaughton discusses these ideas. The title is

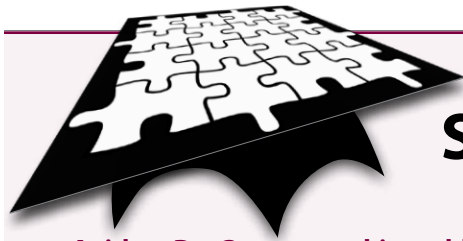
The War on Statistical Significance:

The American Statistician vs.

the New England Journal of Medicine

The book’s web address is <https://war-stat-sig.com>

$p = 0.026$
This means ...



Student Puzzle Corner 34

Anirban DasGupta says this problem seems impossible at first sight, but thinks you will probably arrive at a solution quickly and it might surprise some of you that this is possible. This is the kind of thing statistics students used to learn routinely forty or fifty years ago. The problem is extremely easy to state:

(a) X is a single observation from $N(\mu, \sigma^2)$, where μ, σ are both completely unknown, i.e., $-\infty < \mu < \infty, \sigma > 0$. It is emphasized that the sample size in our experiment is $n = 1$. Explicitly find and plot a joint confidence region for (μ, σ) that has a coverage probability constantly equal to 0.95.

(b) Now suppose you have a sample of size $n = 2$. Derive and plot the corresponding joint confidence region for (μ, σ) that has a coverage probability constantly equal to 0.95, and find its expected area.

Deadline: September 10, 2021

Student members of IMS are invited to submit solutions to bulletin@imstat.org (with subject "Student Puzzle Corner").

The names of student members who submit correct solutions, and the answer, will be published in the issue following the deadline.

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

Solution to Puzzle 33

A palindrome problem in probabilistic number theory: here's a reminder of the puzzle.

A positive integer is called a palindrome if it reads the same from left to right and right to left. All single digit numbers, namely, $1, 2, \dots, 9$ are regarded as palindromes; 101 is a palindrome, or 29092, but not 111011, or 022. A zero in the first position is not allowed in the definition of a positive integer.

For $n \geq 1$, define X_n to be a randomly chosen palindrome of length exactly equal to n . For example, X_3 could be 101. Also define Y_n to be a randomly chosen palindrome less than or equal to 10^n . For example, X_3 could be 1, or 99, or 505, etc. Here are the parts of our problem.

- Calculate $E(X_2), E(X_3)$ exactly; i.e., write the answers as rational numbers.
- Calculate $E(X_4)$, and then, $E(Y_2), E(Y_3), E(Y_4)$ exactly.
- Write a formula for $E(X_n)$ for a general n . Be careful about whether n is odd or even.
- Calculate $E(Y_8), E(Y_{12})$ exactly, and recall from part (b) $E(Y_4)$.
- Conjecture what $E(Y_n)$ is for a general even n .

Student Puzzle Editor Anirban DasGupta explains the solution:

Well done to student members **Casey Bradshaw** of Columbia University, who sent a detailed, complete and correct solution; **Uttaran Chatterjee** of the University of Calcutta also made significant advances.

One first proves that the number of n -digit palindromes is $9 \times 10^{[(n-1)/2]}$ and the sum of all n -digit palindromes is $99/2 \times 10^{[3(n-1)/2]}$, where $[x]$ denotes the integer part of a non-negative number x . On division, one gets $E(X_n)$ for general n .

By summing over n the above expressions separately and then dividing, one gets $E(X_n)$. Careful summation of finite geometric series is required. For example, one will require the sums

$$\sum_{n=2}^{2k} 10^{[(n-1)/2]} = \frac{2 \times 10^k - 11}{9},$$

$$\sum_{n=2}^{2k} 10^{[3(n-1)/2]} = \frac{11 \times 1000^k - 1010}{999},$$

and the corresponding sums when the range of n ends at $2k + 1$.

It then turns out that the expected value of a random palindrome less than or equal to 10^8 is 30280280280/1111 and of a random palindrome less than or equal to 10^{12} is 30280280280280280/111111. The pattern that emerges is clearly striking; but note that this specific pattern is for palindromes less than or equal to 10^n for an even n .



Casey Bradshaw



Uttaran Chatterjee

Call for Papers: *Journal of Statistics & Data Science Education*

Nicholas Horton announces a call for papers on “Teaching reproducibility and responsible workflow” for the *Journal of Statistics and Data Science Education*.

Modern statistics and data science utilizes an iterative data analysis process to solve problems and extract meaning from data in a reproducible manner.

Models such as the PPDAC (Problem, Plan, Data, Analysis, Conclusion, <https://dataschools.education/about-data-literacy/ppdac-the-data-problem-solving-cycle>) Cycle have been widely adopted in many pre-secondary classrooms.

The importance of the data analysis cycle has also been described in guidelines for statistics majors, <https://www.amstat.org/asa/education/Curriculum-Guidelines-for-Undergraduate-Programs-in-Statistical-Science.aspx>, undergraduate data science curricula, <http://dstf.acm.org>, and data science courses, e.g., <https://r4ds.had.co.nz/introduction.html>.

The National Academies of Science, Engineering, and Medicine (NASEM) 2018 “Data Science for Undergraduates” consensus study, <https://nas.org/envisioningds>, identified the importance of workflow and reproducibility as a component of data acumen needed in our graduates. The report reiterated that “documenting, incrementally improving, sharing, and generalizing such workflows are an important part of data science practice owing to the team nature of data science and broader significance of scientific reproducibility and replicability.”

They also noted that reproducibility and workflow raised important questions about the ethical conduct of science.

These reports identify the need for students to have multiple experiences with the entire data analysis cycle.

However, many challenges exist, including that:

1. technologies are rapidly evolving,
2. few faculty were trained in the use of these methods,
3. best practices have not been clearly identified,
4. insufficient vetted and inclusive curricular materials are available
5. accounting for student heterogeneity and broadening participation,
6. many aspects of student understandings in this area are unknown.

To highlight work in this important and developing area, the *Journal of Statistics and Data Science Education* is inviting

submission of papers related to “Teaching reproducibility and responsible workflow” to appear in a forthcoming issue.

Sample topics (non-exhaustive)

- Teaching workflows and workflow systems
- Fostering reproducible analysis
- Promoting reproducibility as a component of replicability and scientific conduct
- Developing and implementing documentation and code standards
- Incorporating source code (version) control systems
- Supporting collaboration
- Integrating ethics
- Conducting effective formative and summative assessment



Submissions at all levels of education (primary through graduate programs and continuing education) and disciplines (social sciences, digital humanities, and STEM) are encouraged.

Timetable

May 2021 (call for submissions)

September 1, 2021 (call for reviewers)

September 15, 2021 (deadline for submissions via the *Journal of Statistics and Data Science Education* submission site <https://mc.manuscriptcentral.com/ujse>, please select the “Teaching reproducibility and workflow” option)

July 2022 (proposed publication date)

Papers received after September are in scope and will be considered as regular submissions.

About the journal

The *Journal of Statistics and Data Science Education* is an open-access peer-reviewed journal with no author fees that is published by Taylor and Francis and the American Statistical Association.

Articles accepted for publication are promptly made available online and featured on the journal website, which is found at <https://www.tandfonline.com/toc/ujse21/current>.

Questions about submissions or the timeline? Please contact Nicholas Horton (Amherst College, *JSDSE* Incoming Editor).

Hand Writing: Algorithms in a Social Context

Contributing Editor David J. Hand, Imperial College London, writes:

“Algorithm” seems to be the word of the moment. To those untrained in quantitative disciplines it can seem to be imbued with magical properties. Algorithms are what underlie speech recognition systems, self-driving cars, and optimal sat-nav route-finding systems. They are what lie at the heart of artificial intelligence systems and surfing the world wide web.

But those in the know understand that algorithms are not magical. They know that an algorithm is just “a process or set of rules to be followed in calculations or other problem-solving operations” (according to the Oxford English Dictionary, which then adds “especially by a computer”). They appreciate that algorithms of one kind or another pervade our lives. A baking recipe is an algorithm: you prepare the ingredients, add them to each other, mix and stir, and place them in the oven at a specified temperature for a given time, to produce a cake. The formula for a manufacturing process is an algorithm: the raw materials are extracted and subjected to various highly specified and tightly constrained transformations, combinations, and other changes. The calculation of a credit score is an algorithm, as is a medical diagnosis, in each case collecting and combining relevant information according to given rules.

Not all algorithms are apparent. You don’t see the algorithms controlling your printer, or transmitting the signals when you make a credit card transaction. They are working behind the scenes. But many others are very apparent: they interact at some level with humans, and they do this in a social context. And this can pose special challenges. Given a clearly specified and unambiguous objective, we can write an algorithm to achieve that objective. In many cases we might even be able to rigorously *prove* that the algorithm is optimal in

some sense (to prove that it’s the quickest or most accurate possible, for example). But the human social world is not an abstract mathematical world which generally permits clear and unambiguous specification. Ambiguity, difference of opinion, and woolliness are the order of the day. The data which the algorithm processes might not be clearly-defined. A six-foot man might be tall or short, according to whether he is a jockey or a basketball player. One right answer to a mathematics question may be better than another because of its novelty or the insight it provides.

Moreover, there might be other factors beyond ambiguity about what the algorithm is supposed to be doing, and beyond uncertainty and bias in the data. Consultant statisticians will be familiar with this challenge. Clients will generally have requirements which are more complicated than simply to optimise some well-specified objective. Certainly, they might want an algorithm that will predict most accurately which customers will be profitable, but they will want that algorithm as soon as possible. Better to have a slightly sub-optimal algorithm in time to do some good, than wait months for a wonderful algorithm which arrives too late to take advantage of. As has been said, *the best is the enemy of the good*.

Other examples of constraints apply in consumer banking. If the aim is to build a model to predict the probability of defaulting on a loan, one will obviously want to build the best model one can. And the best model will use all the information you can get about the applicants: more information can only help the predictive accuracy of the model.

But considerations beyond accuracy, arising from the social and ethical context also apply. For example, for

sound reasons of fairness, such models are precluded from including certain “protected” characteristics, such as disability, sex, and religion.

In the UK in 2020, the Covid-19 pandemic led to the cancellation of the “A-level” examinations. These are the final school examinations, the grades of which determine students’ admission to universities. A sophisticated algorithm was constructed, aimed at predicting most accurately, on the basis of the data that was available, how the students would have been likely to perform in these examinations. But the algorithm, sophisticated though it was, encountered a substantial backlash from the general public. This might have been foreseen: the predictions referred directly to individuals and moreover, they all occurred at the same time, so that a coordinated reaction was inevitable. But the point is that public perception, public understanding of what the algorithm was trying to do and the difficulties of doing it, and public acceptance that the algorithm was a good attempt at meeting a difficult (some would say impossible) challenge was crucial to it being adopted. In the end it wasn’t adopted: public reaction led to the algorithm being discarded, being replaced by teacher predictions, which have substantial problems of their own.

In short, technical accuracy of a predictive model used in a social context is not enough. It is necessary to take into account the human and social conditions and constraints under which the model must function.

Without that, success is impossible.

... ONLY JOKING ...

A machine-learning algorithm walks into a bar.
The bartender asks, “What would you like to drink?”
The algorithm replies, “What’s everyone else having?”

YoungStatS update

Andrej Srakar is the coordinator and co-editor of the YoungStatS project of Young Statisticians Europe. He reports on their efforts at revitalizing statistics in the post-COVID period:

Young Statisticians Europe (YSE) is an initiative of a group of young professionals in statistics, econometrics and data analysis, launched during a workshop in France in October 2018 by 20 representatives from eight European countries (Austria, Belgium, Denmark, Finland, France, Greece, Romania and Spain). It aims to develop a network of young statisticians across Europe to facilitate the exchange of ideas and best practice, as well as better collaboration in research and teaching. The initiative has since received the support of FENStatS, and YSE has now been joined by groups from Ireland, Italy and Slovenia.

During its second meeting in Bucharest, Romania, YSE has adopted a proposal from the Young Section (MSS) of Slovenian Statistical Society to implement a major international blog, YoungStatS, inspired by the famous economics website VoxEU. The proposal has since been implemented and officially presented to the public on World Statistics Day in October 2020, with an introduction from Dr. Walter Radermacher, President of FENStatS.

The YoungStatS project consists of a blog and webinars. (The name YoungStatS alludes to the umbrella organization within which we operate, Federation of European National Statistical Societies, FENStatS). The blog posts consist of short presentations of recently published statistical literature in leading journals in statistics, probability and econometrics, written by the authors of the articles themselves. The idea refers also to two previous successful and similar initiatives of The SHARE Blog and EconomistsTalkArt.org, and the original idea of VoxEU website. As, to our

knowledge there is still no similar initiative in the area of statistics in general, the blog posts should significantly contribute to recognition of recent statistical developments in the eyes of the wider public. The posts include among other contributions those from Adel Javanmard, Marco Mondelli and Andrea Montanari; P. Richard Hahn; Yulia R. Gel; Rianne de Heide; Gabriel Chandler and Wolfgang Polonik; Richard Samworth; Jonas Peters; Gérard Biau and coauthors; Mark van der Laan; Karel Hron and Peter Filzmoser; Christoph Biernacki; and the initial post from Prof. Peter J. Diggle. They are also regularly featured on the R Bloggers platform and several other platforms, with great responses so far.

The second part of the project is the One World YoungStatS webinar series, which started in February 2021 with the webinar on **Recent Advances in Modelling COVID-19**. The monthly webinars are exclusively oriented towards young scholars in statistics, probability and econometrics, and each time feature two, three or sometimes four leading young speakers, including a selected renowned discussant, who present their recent research work on a chosen topic. April 2021 featured a well visited One World webinar on **Bayesian Nonparametrics**, May 2021 a webinar on **Composite-Based Structural Equation Modelling**, and June 2021 a webinar on **Functional Data Analysis**. In the Fall 2021 we will feature webinars on **Concentration Inequalities in Machine Learning** (joint webinar, co-organized with the Young Researchers Committee of the Bernoulli Society—Imma Curato, Sandro Gallo and Zhenhua Lin), featuring among others Prof. Gábor Lugosi as the webinar discussant; and webinars on **symbolic data analysis** and likely on **algebraic statistics**. We are in agreement for several other upcoming webinars in Winter 2021 and in 2022.

YoungStatS project is supported by the Bernoulli Society for Mathematical Statistics and Probability and the Institute of Mathematical Statistics. We thank them greatly for their support. In future, we plan to discuss closer connections to econometric associations, such as the Econometric Society, to also present work in econometrics in a more extensive manner.

The Editorial Board of YoungStatS since its start consists of ten members. It is coordinated by Andrej Srakar (Slovenia), along with Emanuele Aliverti and Christian Capezza (Italy), Geneviève Robin and Imke Mayer (France), Michael Fop and Amirhossein Jalali (Ireland), Elena Maria Prada and Raluca Caplescu (Romania), and Fatemeh Ghaderinezhad (Belgium). We are discussing proposals of new, additional editorial members as a number of younger and internationally active scholars have expressed their willingness to contribute to the work of the project in future.

At the moment, there seem few initiatives of such scope at the international level. The project combines, firstly, the blog, which should provide an important place for presentations of recent and interesting research work in statistics, probability and econometrics (the website designer is Emanuele Aliverti) and opens many possibilities of website presentations—many not yet explored, in the one year of the project's existence. And secondly, the One World webinars promise a place for future presentations of younger scholars, which has been noted as something of great importance by many leading scholars in statistics, probability and econometrics in recent years.

We believe the project will have a significantly positive impact on the statistics community in future years and hope to report soon with more news about its development.

For more info: <https://youngstats.github.io/>

IMS meetings around the world

Joint Statistical Meetings: 2021–2026

JSM 2021 Virtual

August 8–12, 2021. Online.

<https://www2.amstat.org/meetings/jsm/2021/>

The theme is “Statistics, Data, and the Stories They Tell.”

Featured Speakers (all times are listed in Eastern Time).

COPSS Distinguished Achievement Award and Lectureship: **Wing Hung Wong**, Stanford. *Understanding Human Trait Variation from the Gene Regulatory Systems Perspective*. Wednesday, August 11, 5:15 p.m.

COPSS Florence Nightingale David Award and Lectureship: **Alicia Carriquiry**, Iowa State. *Statistics in the Pursuit of Justice: A More Principled Strategy to Analyze Forensic Evidence*. Thursday, August 12, 12:00 p.m.

IMS Presidential Address: **Regina Liu, with Susan Murphy**. *Proactive and All-Encompassing Statistics*. Monday, August 9, 5:15 p.m.

Wald Lectures I and II: **Jennifer Chayes**, University of California, Berkeley. *Modeling and Estimating Large Sparse Networks*. Tuesday, August 10, 3:30 p.m. and Thursday, August 12, 4:00 p.m. Le Cam Lecture: Jianqing Fan, Princeton University. *Understanding Spectral Embedding*. Thursday, August 12, 10:00 a.m.

Medallion Lecture I: **Philippe Rigollet**, MIT. *Statistical Optimal Transport*. Monday, August 9, 1:30 p.m.

Medallion Lecture II: **Robert Nowak**, University of Wisconsin-Madison. *What Kinds of Functions Do Neural Networks Learn?* Tuesday, August 10, 1:30 p.m.

Medallion Lecture III: **Nancy Zhang**, University of Pennsylvania. *DNA Copy Number Profiling from Bulk Tissues to Single Cells*. Thursday, August 12, 12:00 p.m.

Medallion Lecture IV: **Axel Munk**, University of Göttingen. *Empirical Optimal Transport: Inference, Algorithms, Applications*. Wednesday, August 11, 1:30 p.m.

Lawrence D. Brown PhD Student Award Session: **Xin Bing**, Cornell University (*Inference in Interpretable Latent Factor Regression Models*), **Ilmun Kim**, University of Cambridge (*Minimax Optimality of Permutation Tests*), and **Yichen Zhang**, New York University Stern School of Business (*First-Order Newton-Type Estimator for Distributed Estimation and Inference*). Wednesday, August 11, 10:00 a.m.

IMS sponsored meetings: JSM dates for 2022–2026

2022 Joint Statistical Meetings	IMS Annual Meeting @ JSM 2023	JSM 2024	IMS Annual Meeting @ JSM 2025	JSM 2026
August 6–11, 2022	August 5–10, 2023	August 3–8, 2024	August 2–7, 2025	August 1–6, 2026
Washington DC	Toronto, Canada	Portland, Oregon, USA	Nashville, TN, USA	Boston, MA, USA

2022 IMS Annual Meeting

June 27–30, 2022. London, UK

www.imsannualmeeting-london2022.com

CALL FOR INVITED SESSION

PROPOSALS: see announcement on page 10. Mark your calendars for the 2022 IMS Annual Meeting. Held in London immediately before COLT, with extra workshop planned [see announcement, right] between the two meetings. Program and Local Chair: Qiwei Yao.

2022 IMS–COLT Joint Workshop

July 1, 2022. London, UK

<https://bguedj.github.io/colt-ims-2022.github.io/>

The 2022 IMS Annual Meeting [see left] will be immediately followed by the first IMS–COLT joint workshop, a one-day meeting in a hybrid format (on-site in central London, and online), linking the IMS and COLT communities of researchers. (COLT is the annual Conference on Learning Theory, and will take place in 2022 immediately after this IMS–COLT workshop day.) Committee: Benjamin Guedj (chair), Peter Grünwald, Susan Murphy.

At a glance:

forthcoming
IMS Annual
Meeting and
JSM dates

2021

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

2022

IMS Annual Meeting:
London, UK, June
27–30, 2022

JSM: Washington
DC, August 6–11,
2022

2023

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

2024

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

JSM: Portland, OR,
August 3–8, 2024

2025

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

More IMS meetings around the world

YoungStatS Webinar series

NEW

Concentration Inequalities in Machine Learning

September 15, 2021, via Zoom

[w https://youngstats.github.io/post/2021/06/30/concentration-inequalities-in-machine-learning/](https://youngstats.github.io/post/2021/06/30/concentration-inequalities-in-machine-learning/)
The fifth “One World webinar” organized by YoungStatS will take place on September 15th. Selected young European researchers active in the areas of probability and machine learning will present their recent contributions. See the article on page 20 for more on the YoungStatS project. Speakers: Antoine Marchina (Université de Paris) and Geoffrey Chinot (ETH Zurich). Discussant: Prof. Gábor Lugosi, ICREA Research Professor at Pompeu Fabra University and Barcelona GSE Research Professor.

The Myles Hollander Distinguished Lecture September 24, 2021

NEW

Tallahassee, FL, USA and via Zoom

[w http://stat.fsu.edu/HollanderLecture](http://stat.fsu.edu/HollanderLecture)
The Department of Statistics at Florida State University is pleased to announce that Dr. **Susan Murphy** from Harvard will be joining us on September 24, 2021 for this year’s Myles Hollander Distinguished Lectureship. The title of her upcoming talk is “*We used a Bandit Algorithm to Personalize But Did It Work?*”

Registration coming soon via the website above.

AWAITING NEW DATES:

7th Bayes, Fiducial and Frequentist Statistics Conference (BFF7) <http://www.fields.utoronto.ca/activities/20-21/BFF7>

8th Workshop on Biostatistics and Bioinformatics

<https://math.gsu.edu/yichuan/2020Workshop/>

One World ABC Seminar: Ongoing and online

[w https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar](https://warwick.ac.uk/fac/sci/statistics/news/upcoming-seminars/abcworldseminar)
The One World Approximate Bayesian Computation (ABC) Seminars are fortnightly seminars that take place via Zoom on Thursdays at 11:30am, UK time. The idea is to gather members and disseminate results and innovation during these weeks and months under lockdown. Register to receive the webinar link via email. The organizers welcome proposals for future talks. This webinar is part of the larger One World seminar initiative [see below].

One World Probability Seminar (OWPS): Ongoing and online

[w https://www.owprobability.org/one-world-probability-seminar/future-seminars](https://www.owprobability.org/one-world-probability-seminar/future-seminars)
Thursdays, 14:00 UTC/GMT. Please subscribe to the mailing list for updates about the upcoming seminars and other events: <https://www.owprobability.org/ mailing-list>



IMS sponsored meeting

2022 ENAR meeting:

March 27–30, 2022. Houston, TX, USA

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

2023 ENAR meeting:

March 22–25, 2023. Nashville, TN, USA

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

Frontier Probability Days

DECEMBER 2021, Las Vegas, Nevada

[w http://lechen.faculty.unlv.edu/FPD20/](http://lechen.faculty.unlv.edu/FPD20/)
The conference has been rescheduled again, from May 16–18, to the end of 2021. The exact dates will be determined soon. Registration will be open until Oct 16, 2021.

IMS annual meeting

**Bernoulli–IMS 11th World Congress in Probability and Statistics and 2024 IMS Annual Meeting
August 12–16, 2024, Ruhr-University Bochum, Germany**

[w TBC](#)

IMS Asia Pacific Rim Meeting 2022

January 4–7, 2022, Melbourne, Australia

[w http://ims-aprm2021.com/](http://ims-aprm2021.com/)
The sixth IMS-APRM was scheduled to take place in Melbourne in January 2021; it is now postponed until January 2022. IMS-APRM will provide an excellent forum for scientific communications and collaborations for the researchers in Asia and the Pacific Rim, and promote communications and collaborations between the researchers in this area and those from other parts of the world. The program covers a wide range of topics in statistics and probability. Invited Session Proposals submitted in 2020 are being kept on file.

Seminar on Stochastic Processes (SSP) 2022 March 17–19, 2022

Lehigh University, Bethlehem, PA, USA

[w https://wordpress.lehigh.edu/ssp2021/](https://wordpress.lehigh.edu/ssp2021/)
The SSP at Lehigh University is postponed to 2022. Speakers are: Alexei Borodin, Jennifer Chayes, Tadahisa Funaki, Sarah Penington, Makiko Sasada, with the SSP Tutorial Lecture by Greg Lawler planned for March 18, 2022. Details forthcoming.

Statistics in the Big Data Era

June 1–3, 2022

UC Berkeley, CA, USA

[w https://simons.berkeley.edu/workshops/statistics-big-data-era](https://simons.berkeley.edu/workshops/statistics-big-data-era)
The conference was rescheduled from June 2021 to June 1–3, 2022. Update coming soon.

Other meetings around the world

2021-2022 Biomedical Data Science Innovation Lab (BDSIL): Ethical Challenges of AI in Biomedicine

The BDSIL at University of Virginia is seeking applications for the **2021-2022 Biomedical Data Science Innovation Lab: Ethical Challenges of AI in Biomedicine**. The 2021-2022 BDSIL is an intensive workshop program (virtual and in-person components) designed to foster the development of multidisciplinary teams. This facilitated and mentored workshop will tackle the challenges of ethically working with datatypes in support of AI systems and how AI might be made ethical against best practice recommendations.

We are inviting **US-based researchers at the late-stage postdoctoral and early-stage junior faculty level working in the quantitative and data sciences and the biomedical fields** to apply through **July 30, 2021 at 11:59 PM ET**. Competitively selected participants will take part in a series of regularly scheduled online activities beginning in October 2021, participate in a series of team building activities, engage with senior faculty mentors, and enjoy presentations by leading bioethics and data science experts, culminating in a 5-day workshop in historic Charlottesville, Virginia from June 13-17, 2022. Details: visit <http://innovation.lab.virginia.edu/>

17th Applied Statistics Conference September 20–22, 2021, ONLINE

The 17th Applied Statistics Conference will take place on 20–22 September 2021, in the form of a fully virtual conference. The International Applied Statistics conference is organised by Statistical Society of Slovenia and faculties of the University of Ljubljana. Registration is free but required. The deadline for abstract submission is **JULY 25**. Please visit the new web page of the conference <https://stat-d.si/applied-statistics-conference/as2021/> to submit your abstract and register for the Conference.

The programme of the first two days will include three invited speakers, invited sessions and contributed oral and poster sessions. Wednesday September 22 will be devoted to the Workshop. The invited speakers will be Jan Beyersmann (Ulm University, Germany) *On censoring (with a nod towards causality)*; Anuška Ferligoj (University of Ljubljana, Slovenia) *Clustering of attribute and/or relational data*; Richard De Veaux (Williams College, USA) *The Seven Deadly Sins of Data Science - and How to Avoid Them*.

GROW 2021: Graduate Research Opportunities for Women October 15–17, 2021

<https://sites.google.com/uic.edu/grow2021/>

The GROW 2021 conference is aimed at women and non-binary undergraduate students who may be interested in pursuing a graduate degree in the mathematical sciences. The conference is open to undergraduates from US colleges and universities, including international students.

The conference will feature lectures, panel discussions about graduate research in the mathematical sciences, networking opportunities, and advice on preparing applications for graduate school.

Previous iterations of GROW took place at Northwestern (2015-17), the University of Michigan (2018), and the University of Illinois at Urbana-Champaign (2019) and the University of Chicago (2020).

Plenary Speakers: Niall Mangan (Northwestern), Antonio (Tuca) Auffinger (Northwestern), Yaiza Canzani (University of North Carolina at Chapel Hill), Brooke Shipley (University of Illinois at Chicago)

The event will be held at the University of Illinois East Campus. Presuming conditions allow, we plan to hold a hybrid event that will allow for both in-person and remote attendance. Speakers and further details will be announced on this website in due course.

Applications: please register via the link at <https://sites.google.com/uic.edu/grow2021/>. There are no registration fees, and there may be funding available for those who attend in person. The deadline for full consideration (including funding for travel and accommodation) is July 1, but applications will be considered until September 1.

**Meeting organizers: to
get a
FREE LISTING
in this calendar, please
submit the details (as
early as possible) at
[https://www.imstat.org/
ims-meeting-form/](https://www.imstat.org/ims-meeting-form/)
Or you can email
the details to Elyse
Gustafson at [erg@imstat.
org](mailto:erg@imstat.org)
We'll list them here in
the Bulletin,
and on the IMS website
too, at
[imstat.org/meetings-cal-
endar/](https://www.imstat.org/meetings-calendar/)**

Employment Opportunities

Australia: Camperdown

University of Sydney

Lecturer/Senior Lecturer in Data Science or Statistics

<https://jobs.imstat.org/job//57132896>

Australia: Sydney

University of Sydney

Head of School of the School of Mathematics and Statistics

<https://jobs.imstat.org/job//57236255>

Denmark: Aarhus

Department of Mathematics, Aarhus University

Postdoctoral positions in Mathematics and Stochastics

<https://jobs.imstat.org/job//57177736>

Singapore

Yale–NUS College

Open rank tenured or tenure track positions in Data Science

<https://jobs.imstat.org/job//57453231>

Switzerland: Neuchâtel

University of Neuchâtel

PhD assistant in Statistics/Econometrics (full-time)

<https://jobs.imstat.org/job//57235793>

United Kingdom: Leeds

University of Leeds

Professor of Statistics, School of Mathematics

<https://jobs.imstat.org/job//57574557>

United Kingdom: London

London School of Economics

Research Officer in Statistics (Quantifying Uncertainty for Change Points)

<https://jobs.imstat.org/job//57052881>

United Kingdom: Warwickshire

University of Warwick

Research Fellow (103872 - 0621)

<https://jobs.imstat.org/job//57574708>

United States: San Leandro, Berkeley, CA

University of California, Berkeley Department of Statistics

Lecturer

<https://jobs.imstat.org/job//56032311>

United States: Boston, MA

VA Boston Healthcare System

Senior Data Analyst

<https://jobs.imstat.org/job//56875861>

United States: Easton, MD

Saints Peter and Paul School

Math Teacher - Full-Time

<https://jobs.imstat.org/job//57358606>

United States: College Station, TX

Texas A&M University, Department of Statistics

Lecturer of Statistics

<https://jobs.imstat.org/job//56970286>

United States: Alexandria, VA

National Science Foundation

Division Director, Division of Mathematical Sciences (DMS)

<https://jobs.imstat.org/job//57028497>

United States: Fairfax, VA

George Mason University, Department of Statistics


Assistant/Associate Professor, Department of Statistics (Multiple Faculty Positions)

<https://jobs.imstat.org/job//57306679>

Time to look for a new job?
Check out our job ads:
jobs.imstat.org



International Calendar of Statistical Events

IMS meetings are highlighted in maroon with the  logo, and new or updated entries have the  or  symbol.




Please submit your meeting details and any corrections to Elyse Gustafson: erg@imstat.org



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

Online and Ongoing


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

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

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

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


August 2021



August 5–7: Prague, Czech Republic. **3rd International Conference on Statistics: Theory and Applications (ICSTA'21)**
 <https://2021.icsta.net/>


  August 7–12: NOW ONLINE. **IMS Annual Meeting at JSM 2021**  <https://ww2.amstat.org/meetings/jsm/2021/>




September 2021




September 6–9: Manchester, UK. **RSS 2021 International Conference**  <https://rss.org.uk/training-events/conference2021/>

September 8–9: Cambridge, UK. **Induction Course for New Lecturers in the Mathematical Sciences**  <https://ima.org.uk/13572/induction-course-for-new-lecturers-in-the-mathematical-sciences-2021/>

  September 15: **ONLINE YoungStatS Webinar series: Concentration Inequalities in Machine Learning** (via Zoom)
 <https://youngstats.github.io/post/2021/06/30/concentration-inequalities-in-machine-learning/>

September 19–22: Ribno (Bled), Slovenia. **Applied Statistics 2020 (AS2020)**  <http://conferences.nib.si/AS2020>

 September 20–22: ONLINE. **17th Applied Statistics Conference**  <http://conferences.nib.si/AS2020>  <https://stat-d.si/applied-statistics-conference/as2021/>

  September 24: Tallahassee, FL, USA and via Zoom. **The Myles Hollander Distinguished Lecture: Susan Murphy**
 <http://stat.fsu.edu/HollanderLecture>



December 2021

 Dates TBC: Las Vegas, USA. **Frontier Probability Days** (rearranged from May 2021)
 <http://lechen.faculty.unlv.edu/FPD20/>

January 2022

 January 4–7 (postponed from January 2021): Melbourne, Australia. **IMS Asia Pacific Rim Meeting (IMS-APRM2021)**
 <http://ims-aprm2021.com/>

March 2022

 March 17–19 (postponed from March 2021): Bethlehem, PA, USA. **Seminar on Stochastic Processes (SSP)**
 <https://wordpress.lehigh.edu/ssp2021/>

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

Image: freepik.com/vwalakte




International Calendar *continued*

May 2022

May 12–18: Erice, Italy. 7th Workshop on Stochastic Methods in Game Theory **w** <https://sites.google.com/view/erice-smgt2020/the-workshop>

June 2022

 June 1–3: Berkeley, CA, USA (rearranged from June 2021). Statistics in the Big Data Era, and Peter Bickel's 80th birthday **w** <https://simons.berkeley.edu/workshops/statistics-big-data-era>

 June 27–30: London, UK. IMS Annual Meeting **NEW WEBSITE** www.imsannualmeeting-london2022.com

June 27–July 1: Darwin, Australia. Joint Southern Statistical Meetings 2022 (JSSM2022) **w** <https://statsoc.org.au/event-3529236>

July 2022

 July 1: London, UK. IMS–COLT one-day workshop (between IMS meeting and COLT meeting, details to be announced) **w** <https://bguedj.github.io/colt-ims-2022.github.io/>

July 10–15: Riga, Latvia. XXXI International Biometric Conference (IBC2022) **w** www.biometricsociety.org/meetings/conferences

July 18–22: Moscow, Russia. European Meeting of Statisticians **w** <https://ems2022.org/>

August 2022

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

August 21–25: Newcastle, UK. International Conference for Clinical Biostatistics **w** <http://www.iscb.info/>


July 2023

July 15–20: Ottawa, Canada. 64th ISI World Statistics Congress **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 3–8: Portland, OR, USA. JSM 2024 **w** <http://www.amstat.org/ASA/Meetings/Joint-Statistical-Meetings.aspx>

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

August 2025

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

August 2026

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

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

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

We'll list them here in the Bulletin, and on the IMS website too, at imstat.org/meetings-calendar/

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

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Articles

- Persistence of Gaussian stationary processes: A spectral perspective
NAOMI FELDHEIM, OHAD FELDHEIM AND SHAHAF NITZAN 1067
- Random walk on random planar maps: Spectral dimension, resistance, and displacement
EWAIN GWYNNE AND JASON MILLER 1097
- Rates of convergence to equilibrium for potlatch and smoothing processes
SAYAN BANERJEE AND KRZYSZTOF BURDZY 1129
- On the derivative martingale in a branching random walk
DARIUSZ BURACZEWSKI, ALEXANDER IKSANOV AND BASTIEN MALLEIN 1164
- Diffusion approximation for fully coupled stochastic differential equations
MICHAEL RÖCKNER AND LONGJIE XIE 1205
- A shape theorem for the orthant model . . . MARK HOLMES AND THOMAS S. SALISBURY 1237
- Atypical exit events near a repelling equilibrium
YURI BAKHTIN AND HONG-BIN CHEN 1257
- The smallest singular value of inhomogeneous square random matrices
GALYNA V. LIVSHYTS, KONSTANTIN TIKHOMIROV AND ROMAN VERSHYNIN 1286
- An optimal regularity result for Kolmogorov equations and weak uniqueness for some
critical SPDEs . . . ENRICO PRIOLA 1310
- Extremal eigenvalues of critical Erdős–Rényi graphs
JOHANNES ALT, RAPHAËL DUCATEZ AND ANTTI KNOWLES 1347
- Global well posedness of the two-dimensional stochastic nonlinear wave equation on an
unbounded domain . . . LEONARDO TOLOMEO 1402
- A nonamenable “factor” of a Euclidean space . . . ÁDÁM TIMÁR 1427
- Additive functionals as rough paths
JEAN-DOMINIQUE DEUSCHEL, TAL ORENSHTEIN AND NICOLAS PERKOWSKI 1450
- The contact process on random hyperbolic graphs: Metastability and critical exponents
AMITAI LINKER, DIETER MITSCHKE, BRUNO SCHAPIRA AND DANIEL VALESIN 1480
- Anti-concentration for subgraph counts in random graphs
JACOB FOX, MATTHEW KWAN AND LISA SAUERMAN 1515
- The annealed spectral sample of Voronoi percolation . . . HUGO VANNEUVILLE 1554