# BIOMETRIC BULLETIN

International Biometric Society Internationale Biometrische Gesellschaft Société International de Biométrie

*"Biometry, the active pursuit of biological knowledge by quantitative methods." - R.A. Fisher, 1948*

## President's Corner

The countdown is on… only three months left until we will meet in Atlanta for IBC 2024. Register as soon as possible and take advantage of the chance to participate in one or more of the exciting short courses that are being offered by distinguished members of our scientific community. Please also visit from time to time the conference website that provides not only the latest information on the scientific program but also on the social activities that will be offered to enjoy Atlanta and the surroundings. I am really excited to meet you all there, and also excited to have the opportunity to participate face-to-face in our Society´s committee meetings.

Our standing and ad hoc committees are extremely important for the scientific engagement of our Society, in particular, with respect to early career researchers training and education. I am also looking forward to our opening lecture, which will be given by Sander Greenland, an outstanding statistician and epidemiologist. And I will never get tired of thanking all those who make this wonderful event possible. These are: Dimitris Rizopoulos (Netherland Region), leading the International Program Committee (IPC), who has overseen all submissions and which was a tremendous task; Lance Waller (ENAR) who is the head of the Local Organizing Committee (LOC), ensuring that everything runs smoothly on site; Jenna Beak (MCI) who takes care

of our social events; and Courtney Fowler (IBO) who has worked out a detailed marketing strategy providing up-to-date information to our Society members and beyond. And I am grateful to get support in handling such an amazing event from our IBC2024 Organizing President, José Pinheiro, and our IBO officers, in particular Alexander Iula and Peter Doherty, who keep all the balls in the air and make sure that nothing is forgotten. They all contribute to making this conference an unforgettable event for all our community members. But at the end of the day, it is your individual contribution, your talk, poster or short course, your contributions to discussions, your chat with colleagues and your networking activities that will make our conference a fantastic success.

Atlanta will also offer a great opportunity to already prepare for our IBC 2026 that will take place in Seoul, South Korea. Please inform yourself about this great place and the wonderful people who have already started to find a venue and a conference hotel for us. Let me take the opportunity to, in particular, thank Sohee Park, Taesung Park, and Ho Kim for their relentless enthusiasm to prepare for an IBC. You may remember that we were originally planning for our conference in Seoul in 2020 but all efforts were derailed by COVID-19, which was very disappointing. But, as we say in Germany, "Postponed is not cancelled." We are grateful for this second chance.

If you visit our IBS website, don´t miss the latest information about the recently introduced Cox Medal. We invite mid-career individuals with an age limit of 50 (with exceptions made for mitigating circumstances such

# President's Corner

as career breaks) to consider applying. Awardees' research will need to be original, with conceptual depth and novelty, moving the field or a substantive application area forward. Three medals will be awarded every three years by the RSS in partnership with the American Statistical Association (ASA), the Bernoulli Society, the International Biometric Society (IBS), the Institute of Mathematical Statistics (IMS) and the International Statistical Institute (ISI). This year, the deadline for nominations is 31 October, 2024.

I would also like to join in congratulating the winners of the second Rousseeuw Prize for Statistics, which is awarded biennially by the King Baudouin Foundation (KBF). We all know them and their exciting research on multiple testing, in particular, their work on the false discovery rate (FDR): Yoav Benjamini, Daniel Yekutieli, and Ruth Heller from Tel Aviv University. As the KBF points out, the 1995 paper by Benjamini and Hochberg was a milestone in this research introducing FDR and providing a framework for further research in this field. Of course, Yosef Hochberg would also deserve to be one of the prize winners, but unfortunately, he is no longer with us. We will therefore honor his enormous contribution by remembering this groundbreaking paper. Please read more about their pioneering work on our website. Just search on Rousseeuw.

In my last greeting, I promised to report on new regions that will join our Society but since the final voting by our Executive Board has still to take place, my lips will remain sealed. But if you are getting curious…one more reason to come to Atlanta.

All the best,

**Iris Pigeot**
International Biometric Society President
pigeot@leibniz-bips.de

## IBC 24

**8-13 December 2024**
**Atlanta Georgia**
USA
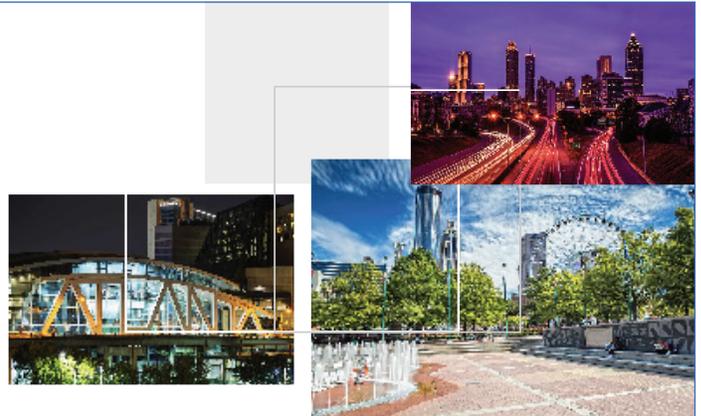
# REGISTER TODAY!

The International Biometric Conference is set to welcome statisticians, mathematicians, biological scientists, and others devoted to interdisciplinary efforts in advancing the collection and interpretation of information in the biosciences to Atlanta, USA from 8-13 December 2024

Scientific program | Networking opportunities | IBC special events | Atlanta's vibrant culture

**REGISTER TODAY!** ibc2024.org

## THANK YOU TO OUR SPONSORS

International Biometric Conference IBC

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# From the Editor

It is quite a satisfying coincidence that we have just completed forty years of successful publication of the Biometric Bulletin (BB) during the year when I would be completing my second term. A gradual evolution process to refine tune the shape and content structure of the BB over the past forty years is a marvelous history. Being the Editor, certainly I was biased and over enthused in repeatedly going through the older volumes of the BB of late eighties and early nineties but to discover a lot of interesting information about IBS activities. The Bulletin was first published in May 1984, with Robert O Kuehl being its very first Editor. A very brief overview of that foundational background was highlighted in these columns of issue 2 & 3 of Vol 40, when we just entered in its distinct glorious year. Subsequently, a brief note by Peter Doherty, the Executive Director, in issue 1 of Vol 41 further highlighted the fortieth anniversary of BB and also informed that it has gained due space in Prof Lynne Billard's recent book 'the history of the International Biometric Society'. As already advised by Peter in his earlier writeup , I would like to suggest readers to enjoy reading the back issues, especially those having deep interest in knowing more and more about the progress of IBS. Such a dearth of detailed crucial information we can't get anywhere else. We must appreciate the special initiative and efforts taken by IBO in the recent past in completing the task of posting copies of all the issues-volumes of the Bulletin on the website for the benefit of the members.

It's time to focus on the IBC 2024 at Atlanta. All our efforts are on to make it a grand success, of course with continued support from the esteemed members and the guests. The President's corner as well the update from IBO has a lot of valuable information of interest apart from the invitations to participate.

Continuing with recently reappeared (in issue 4, Vol 40 and issues 1 & 2 Vol 41) discussion reviews on the basic themes I, II & III published earlier in issues 1, 2 and 3 of Vol 36; we would like to bring forward the basic themes IV, V & VI referring to issues 1 and 2 of Vol 37 on the topics 'inductive and deductive reasoning'; 'Concepts of validity' and 'Errors and bias,' respectively.

The response to the Editor on basic theme IV 'inductive and deductive reasoning' by Prof Kuldeep Kumar, Bond University, Australia, published in issue 2, Vol 37, is outlined hereunder;

*"The Editor has raised a very timely and interesting debate on inductive and deductive reasoning. However, I am slightly deviating from this issue, and I will rather concentrate on a seminal paper by Leo Breiman (2001) on "Statistical Modeling: The Two Cultures" and later on I will try to link it to this topic. According to Breiman, "There are two cultures in the use of statistical modeling to reach conclusions from data. One assumes that the data are generated by a given stochastic data model. The other uses algorithmic models and treats the data mechanism as unknown". In the first case like regression models, logistic regression, and Cox-model, the values of the parameters are estimated from the data and the models are used for information and/or prediction. The second case, which Breiman calls "The Algorithmic Modelling Culture", the analysis in this culture is complex and unknown. Their approach is to find a function f(x) through an algorithm -- --- --- I am a big fan of Leo Breiman and machine learning but my personal experience suggests that if the data satisfies all the assumptions of statistical modeling and we believe in the principle of parsimony, then simple statistical models are better for interpretation -- -- -- We can also bridge the gap between statistical models and machine learning by creating a hybrid or ensemble of the models. Raper (2020) has created another debate on the culture of complacency between Professor Cox and Professor Breiman. Should statistical or biometric research start with the hypothesis and then collect and analyze the data or should we start with the data? Unfortunately, in the era of big data and machine learning we start with data which has already been collected. Coming back to the debate on inductive and deductive reasoning in the broad sense, can we consider machine learning (algorithmic based) approach as deductive and statistical modeling as inductive?"*

**Ajit Sahai**
Biometric Bulletin, Editor

# Update from the IBO



It is incredible that we are already in September, with the International Biometric Conference a short three months away now. And what an interesting planning period it has been, with challenges that are unique to the time and also the location! But Atlanta, USA will be ready, and our members are preparing to come together again for the 32nd time in our history. Through all of the change, our membership remains resilient, and we remain ready to support a familiar event while embracing all that is new about the 2024 edition of the IBC.

Registering for the conference now? You can still save money by registering before your arrival in Atlanta. There is also still time to select a Short Course! Note that, by the time you read this, the Short Course program will have been finalized. And we have taken the step of sharing all planned Contributed Sessions online, so that our audience will have a better feel for the entire scientific program. And by the way, if you have not selected a Short Course yet but have already registered, you are welcome to reach out to my colleague Ryan Dee at ibs@biometricsociety.org and choose your preferred course.

Wondering about the final session schedule? That is expected to be announced soon. Related to this, speakers are reminded that they must register for the event in order to officially participate in the program. Also keep in mind that you don't have to be speaking to attend the IBC. A colleague of mine once shared "we can't all be performers… someone needs to be in the audience!" This is so true!

Ready for some fun? I encourage you to reserve your ticket for Thursday's "Underwater Soiree Gala Dinner" at the extremely popular Georgia Aquarium. I can honestly say it's one of my favorite places to attend a social event. Interested in securing access to all Georgia Aquarium exhibits? Consider purchasing a pass to enjoy all exhibits from 4:00-8:00 p.m. the evening of the Gala Dinner (a dinner ticket is required to qualify for this offer). Tickets and extended passes are both available when you register for the IBC.



While the Society is hard at work preparing for the IBC, we also look forward to welcoming back an important virtual event. The IBS "Distinguished Lecture Series" returns for 2024, and two excellent speakers have already been lined up for this continuing series. The primary purpose of the Distinguished Lecture Series is to reach out and encourage young people globally through inspiring lectures from younger experienced individuals in the Biostatistical field. Speakers are identified by fellow IBS Members. The IBS Education Committee administers the program. IBS members may register for each Distinguished Lecture Series webinar free of charge, and also view previous webinar sessions. Look for registration details coming soon. To see previously-recorded Distinguished Lecture Series sessions, visit the Video Sessions page (login required). Or visit our DLS page to learn more about the Distinguished Lecture Series.

While visiting the Video Sessions area of our website, you might find a topic that interests you in the "Journal Club" section. Did you know that we have now amassed nearly seven years of Journal Club recorded content? And all live and recorded sessions are free to members. Look for another Journal Club session coming soon. To view the current schedule, visit the Journal Club homepage.

We appreciate the opportunity to celebrate with our members. And to that end, we partner with like-minded organizations with an interest in promoting the profession. The IBS and other statistical societies are teaming up to promote the 2025 International Prize in Statistics, and I am inviting you to consider submitting nominations for this prize. **The deadline for nominations is fast approaching!** Nominations are open through 1 October, 2024 for the 2025 prize, which is awarded for a major achievement developed through a single

contribution or multiple contributions over a period of time. The prize can be awarded to individuals, teams, or organizations, and is meant to recognize powerful ideas that have led to breakthroughs in statistics and data science and demonstrated impact on applications, methodology, theory, or practice. Please go to the link above for information about the nomination process. The nomination form may also be found through that link. Please direct your questions to Nominations@StatPrize.org.

The IBS is also a key stakeholder in the development of the **David Cox Medal for Statistics**, which will be awarded for the first time in 2025. The award will recognize mid-career individuals, with an age limit of 50 (with exceptions made for mitigating circumstances such as career breaks). Awardees' research will need to be original, with conceptual depth and novelty, moving the field or a substantive application area forward. The David Cox Medal for Statistics commemorates the pioneering statistical work of Sir David Cox in the fields of statistical theory, methodology and applications. Three medals will be awarded every three years by the RSS in partnership with the American Statistical Association (ASA), the Bernoulli Society, the International Biometric Society (IBS), the Institute of Mathematical Statistics (IMS) and the International Statistical Institute (ISI). **Please remember to submit your nominations by 31 October, 2024**. For a copy of the nomination form, click here. I will once again recognize Society member Ruth Keogh for agreeing to serve on the Prize Committee, and also past IBS President **Tom Louis** for volunteering to serve on the Search Committee.

And finally, I wish to welcome some of our **new volunteers** as they begin roles within the Society. Executive Board member **Simone Gray (ENAR)** has been chosen to serve in the Director position recently vacated by our newly elected Treasurer, Sarah Ratcliffe. We hope you will have an opportunity to meet and thank Simone for her service at this year's IBC! And our Representative Council has met several times this year already, as we strive to involve the Regions, represent our global community appropriately and engage the Society's leadership. I am particularly thankful for those Rep Council members who have agreed to represent their Regions on one of our official task forces. Members of the Inter Region/Network Funding Program Task Force, Membership Benefits Task Force, and Young Statisticians Showcase Task Force all play an important role in bringing their experience and judgement to important IBS and IBC projects.

Representative Council members are also active in assisting our Nominating Committee in identifying candidates for our next **Presidential Election**. As I write this, we are preparing to launch the election. Members may cast a vote for one of two candidates, and the President-Elect will serve a one-year term. Then they shall automatically succeed to the office of President at the end of that year, serving as President for two years, after which time they shall become the Outgoing President for one year. Details regarding the candidates that will be standing for election will be provided separately. In addition to the ballot, you will be provided with biographical information and photos for all candidates, which you may review prior to voting.

My best wishes to you and your colleagues. See you in Atlanta!

**Peter Doherty**
Executive Director

# IBC 24

**8-13 December 2024**
**Atlanta Georgia**
USA

# Schedule at a Glance

The International Biometric Conference is set to welcome statisticians, mathematicians, biological scientists, and other devoted to interdisciplinary efforts in advancing the collection and interpretation of information in the biosciences to Atlanta, USA from 8-13 December 2024

*An Experience You Don't Want to Miss!*
*Check out the IBC2024 Schedule-at-a-Glance*

**SUNDAY, 8 DECEMBER**
7:30 - 18:00 : Registration Open
8:30 - 17:30 : Committee/Board Meeting
9:00 - 16:00 : Short Courses
9:00 - 16:00 : Executive Board Meeting
18:00 - 19:00 : Welcome Reception

**MONDAY, 9 DECEMBER**
9:00 - 10:30 : Opening Ceremony & Presidential Address
9:00 - 17:30 : Contributed Sessions
11:00 - 17:30 : Committee Meetings
11:00 - 17:30 : Showcase Sessions
12:45 - 13:45 : Young Statistician Luncheon
17:45 - 18:45 : Posters and Networking Session
20:00 - LATE : Young Statistician Reception

**TUESDAY, 10 DECEMBER**
9:00 - 17:30 : Mentoring Lounge Open
9:00 - 17:30 : Showcase Sessions
9:00 - 17:30 : Contributed Sessions
9:00 - 17:30 : Invited Sessions
11:00 - 17:30 : Committee Meetings
14:00 - 15:30 : General Membership Meeting
17:45 - 18:45 : Posters and Networking Session

**WEDNESDAY, 11 DECEMBER**
7:00 - 9:30 : Meet-up Spot for Tours & Excursions
9:00 - 17:30 : Special Atlanta Tours & Excursions (no sessions today)

**THURSDAY, 12 DECEMBER**
9:00 - 17:30 : Showcase Sessions
9:00 - 17:30 : Contributed Sessions
9:00 - 17:30 : Invited Sessions
9:00 - 17:30 : Committee Meetings
11:00 - 12:30 : Representative Council Meeting
18:00 - 20:00 : Gala Dinner at Georgia Aquarium

**FRIDAY, 13 DECEMBER**
9:00 - 13:00 : Contributed Sessions
13:00 - 14:00 : Closing Ceremony and Awards

*This schedule is subject to change.*

**REGISTER TODAY!**
ibc2024.org

# Dive deep into a night of elegance, enchantment, and endless wonder

Reserve your seat for an aquatic adventure unlike any other!

www.ibc2024.org

## Underwater Soirée: A Gala Dinner at the Georgia Aquarium

Dive into an unforgettable evening at the Georgia Aquarium! Join us on Thursday, December 12 at 6:00 p.m. for a spectacular Gala Dinner where you'll be treated to an extraordinary experience surrounded by the mesmerizing beauty of Beluga Whales, Whale Sharks, and other magnificent marine creatures. Indulge in delectable cuisine, sip on refreshing beverages, and sway to the rhythm of music as you immerse yourself in the awe-inspiring atmosphere of the world's largest aquarium. It's an evening not to be missed, where every moment promises wonder and delight. Get ready to make waves at the Gala Dinner of the year!

## Tickets are $100 USD/person - Add your tickets to your conference registration.

Please visit the IBC2024 to learn more and register. *Space is limited!*

## For an Additional $35 USD/person - Get full access to ALL aquarium exhibits before and during the event! (4:00 p.m. - 8:00 p.m.)

Already registered for the IBC? Please contact the International Business Office to add a Gala ticket to your registration.

www.ibc2024.org

# Editorial Updates

## *Biometrics*

**June 2024 Issue Highlights**

The June issue features articles across a broad spectrum of applications and methodology.

The Biometric Methodology section has articles on:

- "Differential recall bias in estimating treatment effects in observational studies," by Suhwan Bong, Kwonsang Lee, and Francesca Dominici;

- "A Bayesian convolutional neural network-based generalized linear model," by Yeseul Jeon, Won Chang, Seonghyun Jeong, Sanghoon Han, and Jaewoo Park;

- "Doubly robust estimation and sensitivity analysis for marginal structural quantile models," by Chao Cheng, Liangyuan Hu, and Fan Li;

- "Efficient testing of the biomarker positive and negative subgroups in a biomarker-stratified trial," by Lang Li and Anastasia Ivanova;

- "Incorporating nonparametric methods for estimating causal excursion effects in mobile health with zero-inflated count outcomes," by Xueqing Liu, Tianchen Qian, Lauren Bell, and Bibhas Chakraborty;

- "Doubly robust proximal synthetic controls," by Hongxiang Qiu, Xu Shi, Wang Miao, Edgar Dobriban, and Eric Tchetgen Tchetgen;

- "Robustness of response-adaptive randomization," by Xiaoqing Ye, Feifang Hu, and Wei Ma;

- "Sequential covariate-adjusted randomization via hierarchically minimizing Mahalanobis distance and marginal imbalance," by Haoyu Yang, Yichen Qin, Yang Li, and Feifang Hu;

- "Regression models for average hazard," by Hajime Uno, Lu Tian, Miki Horiguchi, Satoshi Hattori, and Kenneth L. Kehl;

- "Efficient data integration under prior probability shift," by Ming-Yueh Huang, Jing Qin, and Chiung-Yu Huang;

- "Testing conditional quantile independence with functional covariate," by Yongzhen Feng, Jie Li, and Xiaojun Song;

- "Identifying temporal pathways using biomarkers in the presence of latent non-Gaussian components," by Shanghong Xie, Donglin Zeng, and Yuanjia Wang;

- "Causal inference for time-to-event data with a cured subpopulation," by Yi Wang, Yuhao Deng, and Xiao-Hua Zhou;

- "Topical hidden genome: discovering latent cancer mutational topics using a Bayesian multilevel context-learning approach," by Saptarshi Chakraborty, Zoe Guan, Colin B. Begg, and Ronglai Shen;

- "Addressing age measurement errors in fish growth estimation from length-stratified samples," by Nan Zheng, Atefeh Kheirollahi, and Yildiz Yilmaz;
- "Single proxy control," by Chan Park, David B. Richardson, and Eric J. Tchetgen Tchetgen;
- "Confounder-dependent Bayesian mixture model: Characterizing heterogeneity of causal effects in air pollution epidemiology," by Dafne Zorzetto, Falco J. Bargagli-Stoffi, Antonio Canale, and Francesca Dominici;
- "Well-spread samples with dynamic sample sizes," by Blair Robertson, Chris Price, and Marco Reale; "Deep partially linear Cox model for current status data," by Qiang Wu, Xingwei Tong, and Xingqiu Zhao;
- "Flagging unusual clusters based on linear mixed models using weighted and self-calibrated predictors," by Charles E. McCulloch, John M. Neuhaus, and Ross D. Boylan;
- "High-dimensional multi subject time series transition matrix inference with application to brain connectivity analysis," by Xiang Lyu, Jian Kang, and Lexin Li.

The Biometric Practice section sets out with a discussion paper entitled "Bayesian meta-analysis of penetrance for cancer risk," by Thanthirige Lakshika M Ruberu, Danielle Braun, Giovanni Parmigiani, and Swati Biswas. The paper is discussed by Sudipto Banerjee; Gianluca Baio; Peter Müller and Bernardo Flores; Moreno Ursino and Sarah Zohar; and Paul Gustafson.

**Regular papers in the Biometric Practice section are on:**
- "Integrating randomized and observational studies to estimate optimal dynamic treatment regimes," by Anna Batorsky, Kevin J. Anstrom, and Donglin Zeng;
- "Dissecting the colocalized GWAS and eQTLs with mediation analysis for high-dimensional exposures and confounders," by Qi Zhang, Zhikai Yang, and Jinliang Yang;
- "A Bayesian semi-parametric model for learning biomarker trajectories and changepoints in the preclinical phase of Alzheimer's disease," by Kunbo Wang, William Hua, MeiCheng Wang, and Yanxun Xu;
- "High-dimensional covariate-augmented overdispersed poisson factor model," by Wei Liu and Qingzhi Zhong;
- "Estimating the size of a closed population by modeling latent and observed heterogeneity," by Francesco Bartolucci and Antonio Forcina;
- "Case weighted power priors for hybrid control analyses with time-to-event data," by Evan Kwiatkowski, Jiawen Zhu, Xiao Li, Herbert Pang, Grazyna Lieberman, and Matthew A. Psioda; and
- "Behavioral carry-over effect and power consideration in crossover trials," by Danni Shi and Ting Ye.

**Cécile Proust-Lima to be the 2025 – 2027 *Biometrics* Co-editor**

The search committee to identify a successor for *Biometrics* Co-editor Katja Ickstadt (German Region) has proposed Cécile Proust-Lima (French Region) to service for the years 2025 –

2027. Katja is serving as the European Co-editor for the years 2022 – 2024.

The search committee consisted of Geert Molenberghs, *Biometrics* Executive Editor, Chair (Belgian Region); Erica Moodie, *Biometrics* CE (ENAR); Katja Ickstadt, Biometrics CE (German Region); Matthew Schofield, *Biometrics* CE (Australasian Region); Ronald Geskus, EAC Chair (Netherlands Region); Tomasz Burzykowski (Belgian Region); Rhian Daniel (British and Irish Region); Andrea Lavalle (Argentinian Region); and Edmore Ranganai (South Africa).

Cécile has kindly accepted the nomination, which was approved by the Editorial Advisory Board and the Executive Board. The continuing Co-editors are Matt Schofield (Australasian Region, 2023 – 2025) and Erica Moodie (ENAR, 2024 – 2026).

## Editorial Board News

As we did last year, two entirely virtual *Biometrics* Editorial Board Meetings took place on 12 July and 29-30 August 2024, at different times of day, to accommodate our global Associate Editors' community.

Given that 2024 is an IBC year, there will be a face-to-face Associate Editors' meeting during the

International *Biometrics* Conference, in December 2024, in Atlanta, Georgia.

## Biometrics News

The journal's impact factor was 1.524 in 2017, 1.755 in 2018, 1.711 in 2019, then rose to 2.571 in 2020, and returned to 1.701 for 2021. It rose again somewhat in 2022, to the value 1.900. The 2023 impact factor is 1.3922. Note that all of these are two-year impact factors. The 5-year version for 2023 is 2.2. The journal ranks 53/168 in the category "Statistics & Probability," 66/109 in "Biology," and 50/65 in "Mathematical & Computational Biology."

There has been a dramatic reduction in the journal's backlog. Because of the change of publisher at the end of 2023, from Wiley to Oxford University Press, the pipeline was cleared via three super issues in June, September, and December 2023. As a result, the backlog is down from about one year and a half to less than half a year. Also, journal articles are now assigned to an issue in an ongoing fashion. This means that an accepted, proofread, and fully typeset article receives its final bibliographic and citation information almost immediately.

The journal and its contents can be accessed via the IBS web pages: http://www.biometricsociety.org/, selecting "Biometrics" from the drop-down menu at the "Publications" link at the top of the page, and accessing the "Click here" link. Alternatively, it is directly accessible at https://academic.oup.com/biometrics.

Find us on X at @Biometrics_ibs.

**Geert Molenbergh**
Biometrics Executive Editor

# The Journal of Agricultural, Biological, and Environmental Statistics (JABES)

We have closed all special issues running along 2023-2024. In particular, we have recently closed the one on **New Perspectives in Statistics, Data Science and Econometrics for Agriculture, Land Use and Forestry**, guest edited by Felicetta Carillo, Paolo Maranzano, and Philipp Otto. We are now open to receiving new topics for incoming special issues.

**Recall the Best Paper winners for 2022 and 2023 are the following:**

- **Winner:** Probabilistic Forecasts of Arctic Sea Ice Thickness Peter A. Gao, Hannah M. Director, Cecilia M. Bitz, & Adrian E. Raftery [JABES, 27, 2 (2022) pages 280-302]

- **Honorable mention:** A Bayesian Approach for Data-Driven Dynamic Equation Discovery Joshua S. North, Christopher K. Wikle, & Erin M. Schliep [JABES, 27, 4 (2022) pages 728-747]

- **Winner:** Asynchronous Changepoint Estimation for Spatially Correlated Functional Time Series, Mengchen Wang, Trevor Harris, Bo Li [JABES, 28, 1 (2023) pages 157-176]

- **Honorable mention:** Modeling Community Dynamics Through Environmental Effects, Species Interactions and Movement, Becky Tang, James S. Clark, Peter P. Marra, Alan E. Gelfand [JABES, 28, 1 (2023) pages 178-195]

This award is presented at the International Biometric Conference (www.ibc2024.org) every two years, and the winning authors are invited to join for the awards ceremony and also present their papers at the **special *JABES* Showcase Session during IBC 2024**, which will take place during the week of 8-13 December 2024 in Atlanta, USA.

**September 2024 issue (Volume 29, Number 3) features the following papers:**

- **The b-divergence for Bandwidth Selection in Circular Kernel Density Estimation** Babacar Diakhate, Hamza Dhaker, Papa Ngom

- **Sample Size for Estimating Disease Prevalence in Free-Ranging Wildlife Populations: A Bayesian Modeling Approach** James G. Booth, Brenda J. Hanley, Florian H. Hodel, Christopher S. Jennelle, Joseph Guinness, Cara E. Them, Corey I. Mitchell, Md Sohel Ahmed, Krysten L. Schuler

- **Spatial Confounding and Spatial+ for Nonlinear Covariate Effects** Emiko Dupont, Nicole H. Augustin

- **Accommodating False Positives Within Acoustic Spatial Capture–Recapture, with Variable Source Levels, Noisy Bearings and an Inhomogeneous Spatial Density** Felix T. Petersma, Len Thomas, Aaron M. Thode, Danielle Harris, Tiago A. Marques, Gisela V. Cheoo, Katherine H. Kim

- **An Application of Spatio-Temporal Modeling to Finite Population Abundance Prediction** Matt Higham, Michael Dumelle, Carly Hammond, Jay Ver Hoef, Jeff Wells

- **Comparing Methods for Determining Power Priors Based on Different Congruence Measures** Jing Zhang, Ainsley Helling, A. John Bailer

- **Predicting the Temperature-Driven Development of Stage-Structured Insect Populations with a Bayesian Hierarchical Model** Kala Studens, Benjamin M. Bolker, Jean-Noël Candau

- **Environmental Effects on the Spatiotemporal Variability of Sardine Distribution Along the Portuguese Continental Coast** Daniela Silva, Raquel Menezes, Ana Moreno, Ana Teles-Machado, Susana Garrido

- **Integrating Different Data Sources Using a Bayesian Hierarchical Model to Unveil Glacial Refugia** Mauricio Campos, Bo Li, Guillaume de Lafontaine, Joseph Napier, Feng Sheng Hu

- **Principal Component Analysis of Two-dimensional Functional Data with Serial Correlation** Shirun Shen, Huiya Zhou, Kejun He, Lan Zhou

- **Monitoring and Comparing Air and Green House Gases Emissions of Various Countries** Ambreen Shafqat, Qurat Ul An Sabir, Su-Fen Yang, Muhammad Aslam, Mohammed Albassam, Kashif Abbas

## BOOK REVIEW

Review of "Numerical Methods in Environmental Data Analysis" by Moses Eterigho Emetere Mudarris Mudarris, Desy Permatasari

*JABES* should be home for Data Science broadly defined as the science of learning from data, incorporating advances in computation and data analytics, with statistical theory and inference for problems coming from the branches that sustain the journal. We would like to encourage interdisciplinary submissions that involve collaboration between statisticians and other data scientists to find solutions to these challenges, through innovative methodological developments and applications, bringing together data science and statistics. The innovative methodology should be directly motivated by real world data problems in agricultural, biological and environmental settings. For more information on upcoming issues, the editorial board, and the aim and scope of the journal, please visit our website http://link.springer.com/journal/13253. We also accept submissions of books to review in the upcoming issues of *JABES;* to submit a book for review, please see the above website (click on "Editorial Board") or contact **Vanda Inancio de Carvahlo** (vanda.inacio@ed.ac.uk), University of Edinburgh, UK.

Please follow us on X: @JabesEditor.

**Jorge Mateu**
Editor-in-Chief

# Software Corner
## Interactive resources for teaching statistics

Connor Smith, School of Mathematical and Physical Sciences, Macquarie University, Australia

It is well known that statistical anxiety is a key player in a student's ability to learn and understand statistical concepts (Jazayeri et al. 2024; Macher et al. 2015; Valle et al. 2021). As educators, we can attempt to counter parts of this anxiety by providing students with access to interactive resources that can be used to promote independent learning, as interactive resources have previously been shown to be a preferred learning medium compared to static images (Zhao et al. 2023). Thankfully, a wide variety of interactive resources already exist, created by the statistical community. Through these technological advancements, a field traditionally viewed as challenging and abstract is benefiting immensely.

This article highlights some of the better interactive resources discovered throughout my teaching journey. This curated set of online interactive resources has been selected specifically for teaching introductory statistics. These resources range from dynamic visualizations and simulations to comprehensive tutorials and interactive exercises. By leveraging these tools, educators can create a more immersive and intuitive learning experience, helping students grasp complex statistical theories and applications more effectively. Whether you're an instructor looking to enhance your teaching toolkit or a student aiming to improve your understanding of statistics, this article will introduce you to some of the best online resources available, ensuring that learning statistics is both informative and enjoyable.

### Useful Resource #1
Recently, the use of Shiny applications to improve students' satisfaction and learning outcomes has been on the increase (Fawcett 2018; Sisso, Bass, and Williams 2023). With content designed by undergraduate students, the Book Of Apps for Statistics Teaching (BOAST) is an amazing resource for students to engage with. These student-centered Shiny applications have been designed by undergraduate students, for learners of any age. Found at https://sites.psu.edu/shinyapps/, these applications are readily available
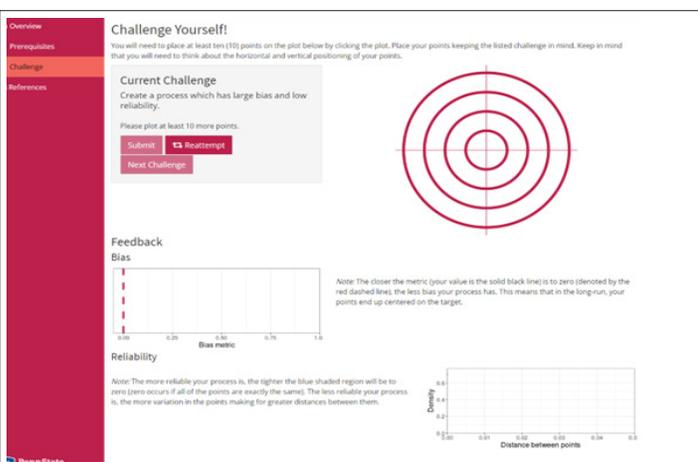


*Figure 1: Zhang, Y., Grey, C., Hatfield, N. J., and Pearl, D. K. (2020). Bias and Reliability. [R Shiny app].*
*Available https://psu-eberly.shinyapps.io/Bias_and_Reliability*

for classroom or independent use. Shiny applications also benefit from being mobile-friendly, making them accessible to the majority of students at any point in time.

The BOAST project is an ongoing project where potential applications go through rigorous guidelines and testing to ensure the finished product is of the highest quality. To view these guidelines further, you can visit https://educationshinyappteam.github.io/Style_Guide/ for more information about the accessibility considerations that are taken into account during the design process. All applications also contain proper documentation of all material and code used in their creation.

### Useful Resource #2
Another amazing resource created by Daniel Kunin during their undergraduate studies at Brown University is Seeing Theory. Throughout my review of interactive resources, I found myself gravitating toward content created by students for students, as it is highly effective because it often addresses the specific challenges and questions that learners face, making it more relatable and accessible. The primary driver for the Seeing Theory project was the introduction of key statistical concepts through visualisations which contain interactive components. This resource is available at https://seeing-theory.brown.edu/. However, it is important to note that the project has not been updated since 2019.



*Figure 2: Kunin, D., Guo, J., Devlin, T. D., and Xiang, D. 2019, Seeing Theory, accessed 28 July 2024, https://seeing-theory.brown.edu/basic-probability/*

The resource employs dynamic graphics and simulations to illustrate complex statistical principles, allowing users to engage with data and explore theoretical concepts in a more intuitive and accessible manner. The design elements of Seeing Theory contributed to its winning the 2017 Kantar Information is Beautiful Awards and an honoree in the 2018 Core77 Design Awards. The combination of both mathematical notation and visualisations facilitates learning from the entire cohort, regardless of their preferred learning style.

### Useful Resource #3
Although applications created in Observable.js do not exactly classify as a single interactive education resource, there are many different applications and their underlying source code readily available. Allison Horst, a data scientist and illustrator, has created a wide array of visualisations and simulations that can be used to teach statistics. She is currently the Developer Marketing Manager for Observable and has developed course to learn the coding language. With the release of the open-source publishing system

Quarto, it is now easier to embed interactive visualisations created in Observable.js into your own teaching materials. This allows for the seamless combination of interactive visualisations with traditional teaching materials (created in html).
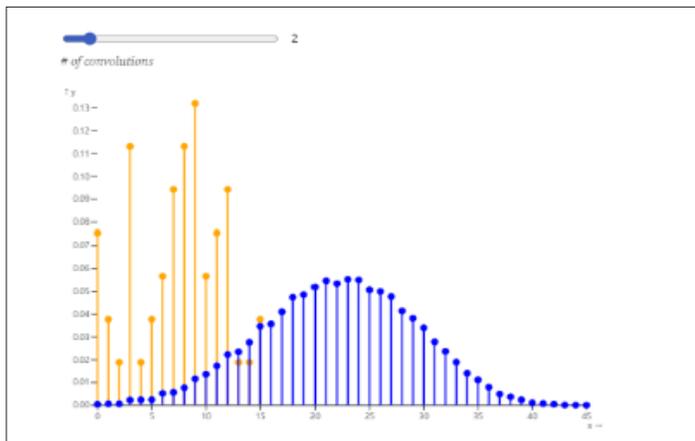


*Software Corner 2 Figure 3: Lewis, W., 2024, Observable, accessed 28 July 2024, https://observablehq.com/d/d420b7c6626e2b5c*
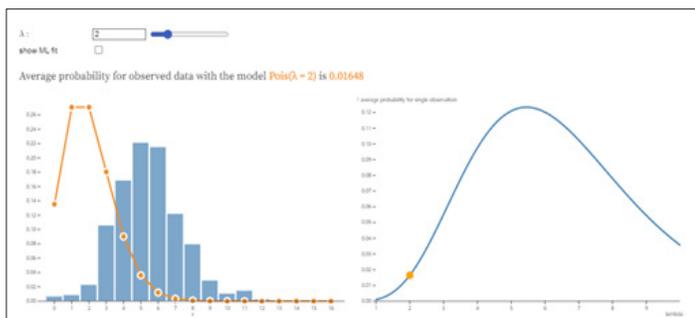


*Figure 4: Villani, M., 2024, Observable, accessed 28 July 2024, https://observablehq.com/@mattiasvillani/maximum-likelihood-poisson-regression*

There exists a large array of more complex resources including convolutions of convolutions of discrete random variables Figure 3 and maximum likelihood estimation for Poisson regression Figure 4. Most topics can be found throught the websites search functionality. These resources are highly beneficial for students who are looking to explore more complex statistical concepts in a more interactive manner and through their inclusion in already prepared teaching materials, educators can easily integrate them into their teaching plans.

It must be noted that the use of Observable.js requires a basic understanding of JavaScript to enable transfer of code into a Quarto document and has the code operate properly.

**Other Recommended Resources**
There are also a wide array of additional interactive resources that can be used to each statistics. These resources have been built from a range of different technologies and are also at different stages in their life cycles:

- Applets by Allan J. Rossman and Beth L. Chance can be found at https://www.rossmanchance.com/applets/.

- Interactive visualisation by Kristoffer Magnusson who is currently a postdoctoral clinical psychologist can be found at https://rpsychologist.com/viz

- The Art and Science of Learning from Data by Bernhard Klingenberg can be found at https://artofstat.com/web-apps. Some content is behind a paywall.

- Little Apps for Teaching Stats by Danny Kaplan can be found at https://www.statprep.org/LittleAppSite/

**Summary**
Interactive resources offer a valuable solution by facilitating independent exploration and engagement with statistical concepts. The resources highlighted in this article represent some of the best tools available for teaching introductory statistics, with applications created by educators at various stages of their educational journey. These tools not only make complex theories more accessible but also enhance the learning experience through interactive and engaging methods. By integrating these resources into the educational process, both educators and students can significantly benefit from a more intuitive and enjoyable approach to mastering statistics.

**References**
Fawcett, Lee. 2018. "Using Interactive Shiny Applications to Facilitate Research-Informed Learning and Teaching." Journal of Statistics Education 26 (1): 2–16.

Jazayeri, Mitra, Xia Li, Eric Morris, Dan Laurence, and Birgit Loch. 2024. "Reducing Statistics Anxiety for Psychology Students During the Global Pandemic: A Methodology Approach." International Journal of Mathematical Education in Science and Technology 55 (8): 1769–88.

Macher, Daniel, Ilona Papousek, Kai Ruggeri, and Manuela Paechter. 2015. "Statistics Anxiety and Performance: Blessings in Disguise." Frontiers in Psychology 6: 1116.

Sisso, Danielle, Nicole Bass, and Immanuel Williams. 2023. "Teaching One-Way ANOVA with Engaging NBA Data and r Shiny Within a Flexdashboard." Teaching Statistics 45 (2): 69–78.

Valle, Natercia, Pavlo Antonenko, Denis Valle, Kara Dawson, Anne Corinne Huggins-Manley, and Benjamin Baiser. 2021. "The Influence of Task-Value Scaffolding in a Predictive Learning Analytics Dashboard on Learners' Statistics Anxiety, Motivation, and Performance." Computers & Education 173: 104288.

Zhao, Fang, Lena Schützler, Oliver Christ, and Robert Gaschler. 2023. "Learning Statistics with Interactive Pictures Using r Shiny: Generally Preferred, but Not Generally Advantageous." Teaching Statistics 45 (2): 106–24.

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# STRengthening Analytical Thinking for Observational Studies (STRATOS): Cooperation in the Setting International Standards in Analyzing Patient Reported Outcomes and Quality of Life Endpoints (SISAQOL-IMI) project

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In 2019, the STRATOS initiative, recognized in its mission to develop guidance for the design and analysis of observational studies, was approached by the SISAQOL consortium to join a European Innovative Medicines Initiative application. SISAQOL is short for Setting International Standards in Analyzing Patient-Reported Outcomes and Quality of Life Endpoints. The SISAQOL consortium was formed in 2016, aiming to establish recommendations for patient reported outcome (PRO) analysis (1, 2).

PROs are direct reports from patients about their health condition and treatment effects, without interpretation by clinicians, commonly collected via questionnaires. PROs are becoming increasingly important in medical research and clinical care and they are increasingly collected in both settings. Although PROs are considered important endpoints in the benefit/risk assessment of new cancer therapies, no agreed international standards exist on the design, analysis, presentation, or interpretation of these data.

STRATOS accepted the invitation, the grant application was successful, and the SISAQOL-IMI consortium started in 2021 (3). The international, multidisciplinary consortium is led by the European Organization for Research and Treatment of Cancer (EORTC) and the pharmaceutical company Boehringer Ingelheim. This four-year project aims to establish international standards in the analysis of patient reported outcomes and health-related quality of life data in cancer clinical trials. This is to be done by seeking consensus across stakeholders, which include industry, academics, clinicians, trial organizations, regulators, and patients. SISAQOL-IMI is organized in different work packages such as methodology for cancer randomized controlled trials (RCTs), the feasibility of recommendations for single-arm trials (SATs), guidance for clinically meaningful change in cancer trials, and communication tools for PRO findings in cancer trials. The work in the different working packages leads to the formulation of recommendation statements, which are subsequently discussed in yearly consensus rounds.

STRATOS is particularly involved in work package 3 (WP3), which focuses on SATs and other non-randomized studies. This work package is led by Saskia le Cessie (STRATOS member) and Satrajit Roychoudhury (Pfizer). STRATOS members Els Goetghebeur and Willi Sauerbrei actively participate in this work package while junior researchers Doranne Thomassen and Dries Reynders are carrying out some of the statistical projects, described below, with us.

The goal of WP3 is to investigate the feasibility of and to develop recommendations for the use of PROs for non-randomized cancer studies with a specific focus on SATs. In the first year of the project, an overview was made of current best practices by reviewing guidelines related to the design and analysis of PRO endpoints in SATs, and by conducting surveys among SISAQOL-IMI members involved in WP3. WP3 contributors were asked to indicate the appropriate study population, methods to handle terminal events (death) and other intercurrent events, appropriate analysis methods, methods to handle the absence of a comparator group, use of minimal clinically important differences for PROs, and appropriate visualization of PRO results for a SAT. Since many of these issues are also relevant to WP2, which focuses on randomized trials, harmonization meetings between WP2 and WP3 were planned to align recommendations wherever possible.

To obtain an overview of current practices, we performed a literature review of 60 recent single-arm cancer studies incorporating PROs. The review revealed that only 13 of these studies used PROs as a primary or co-primary endpoint, and that predefined research hypotheses regarding PROs were rare. Methods for handling missing PRO data were often unreported or unjustified, and PROs were rarely collected after the end of treatment. Remarkably, in the majority of the studies, the PRO analysis supported the investigated treatments; only one study advised against a treatment based on PRO data. This result points to a publication bias. The handling of intercurrent events, such as death or treatment discontinuation, was generally not discussed. Furthermore, only one study made a formal comparison of PROs with historical controls. The disappointing but expected results of this review are published in Lancet Oncology (4).

Based on the responses of the stakeholder surveys and the literature review, a first list of recommendation statements was formulated and discussed. The recommendations consid-

ered the aims of PROs in SATs, formulation of research questions in the context of the ICH E9(R1) estimand framework (5), choosing appropriate outcome measures, addressing the absence of a randomized control group, and handling intercurrent events and missing data. One particular issue is addressing death in the research question of a PRO study. PROs after death are not defined and therefore the estimand of interest in SAT is often a summary of PROs in those who are still alive at a specific time (6). The common practice of standard linear mixed models is not appropriate, as these models implicitly impute missing PROs after death.

The second and subsequent years of the work of WP3 were dedicated to further research on the methodology for SATs with PROs and to the extension of the list of recommendation statements. At the ISCB conference in Newcastle in 2022, a STRATOS meeting was organized to ask for STRATOS members' advice regarding PRO analyses in SATs. A second meeting was organized in the fall of 2023 in Ghent with a focus on causal inference and missing data in our setting. This greatly helped us to refine and update the recommendations.

We also performed three subprojects related to statistical issues in WP3. The first one was a case study where the set of suggested recommendations for PROs in single-arm oncology studies were piloted. This resulted in a guidance paper for designing and analyzing PRO single-arm studies which is submitted for publication (7). In the second subproject, we considered methods to deal with missing data in PRO measurements in single arm clinical cancer trials. Handling missing PRO data can be complicated because intercurrent events (e.g., death, disease progression) may be related to the occurrence of missing PRO measurements. We explored several methods to account for missing PRO data, which address the occurrence of intercurrent events, account for a longitudinal data structure, and do not impute after death, as PROs after death are undefined. A paper on this topic is currently under review by the consortium and will be submitted for publication soon.

The third subproject focused on the comparison of PRO data in SATs with external control data. This imposed several challenges as many factors can confound such a comparison. To mention some possible issues, depending on the design: different populations with different distributions of baseline covariates and treatment protocols, the use of different PRO measures or questionnaires, different timing of measurements, and different drop-out patterns. RCTs in late-stage oncology are also non-trivial in this regard since one typically allows for switching to the experimental treatment in an effort to encourage accrual. A paper that considers methods to account for baseline differences, and discusses various estimands to handle death, is currently being written. Estimators that handle differential death and censoring are further proposed and compared, focusing on the two-dimensional estimand of PROs while alive and survival. Results of the three projects have been presented at several STRATOS symposia and ISCB meetings. Slides of all talks are available on the STRATOS website (https://www.stratos-initiative.org/en/news).

In order to allow a meaningful comparison between or a feasible meta-analysis of several studies, relevant variables need to be collected using similar (ideally the same) measurement techniques across all studies. In this context, a broad agreement of clinicians and researchers on a relevant set of core variables for a disease of interest would be important. Starting such projects would be most relevant to rethinking the data elements collected and would increase the potential for multipurpose data reusability. Increased harmonization is necessary and would improve the data infrastructure for clinical research (8).

Being involved in this international SISAQOL-IMI consortium is a unique experience. The collaboration of many different disciplines has led to a set of well-thought out and well-formulated recommendation statements with broad acceptance for PROs in cancer studies. The project is in its final stages and the final recommendations will be presented soon. In 2024, the SISAQOL-IMI received the SPAIG Award from the American Statistical Association for its successful collaboration across academia, industry, and government. This recognition reflects its efforts to advance the patient-reported outcomes field by harmonizing guidance to serve diverse stakeholders. (https://www.sisaqol-imi.org/).

1. Bottomley A, Pe M, Sloan J, Basch E, Bonnetain F, Calvert M, et al. Analysing data from patient-reported outcome and quality of life endpoints for cancer clinical trials: a start in setting international standards. Lancet Oncol. 2016;17(11):e510-e4.

2. Coens C, Pe M, Dueck AC, Sloan J, Basch E, Calvert M, et al. International standards for the analysis of quality-of-life and patient-reported outcome endpoints in cancer randomised controlled trials: recommendations of the SISAQOL Consortium. Lancet Oncol. 2020;21(2):e83-e96.

3. Pe M, Alanya A, Falk RS, Amdal CD, Bjordal K, Chang J, et al. Setting International Standards in Analyzing Patient-Reported Outcomes and Quality of Life Endpoints in Cancer Clinical Trials-Innovative Medicines Initiative (SISAQOL-IMI): stakeholder views, objectives, and procedures. Lancet Oncol. 2023;24(6):e270-e83.

4. Liu L, Choi J, Musoro JZ, Sauerbrei W, Amdal CD, Alanya A, et al. Single-arm studies involving patient-reported outcome data in oncology: a literature review on current practice. Lancet Oncol. 2023;24(5):e197-e206.

5. European Medicines Agency. ICH E9 (R1) addendum on estimands and sensitivity analysis in clinical trials to the guideline on statistical principles for clinical trials. 2020. Available from: https://www.ema.europa.eu/en/documents/scientific-guideline/ich-e9-r1-addendum-estimands-sensitivity-analysis-clinical-trials-guideline-statistical-principles_en.pdf

6. Kurland BF, Johnson LL, Egleston BL, Diehr PH. Longitudinal Data with Follow-up Truncated by Death: Match the Analysis Method to Research Aims. Stat Sci. 2009;24(2):211.

7. Thomassen D, Roychoudhury S, Amdal CD, Reynders D, Musoro JZ, Sauerbrei W, et al. The role of the estimand framework in the analysis of patient-reported outcomes in single-arm trials submitted. 2024.

8. Franklin JB, Marra C, Abebe KZ, et al. Modernizing the Data Infrastructure for Clinical Research to Meet Evolving Demands for Evidence. JAMA. Published online August 05, 2024.

# Region News

## Austro-Swiss (ROeS)

### ROeS 2025 Conference

The preparations for our 34th ROeS conference have already started and the conference will take place from 14-18 September 2025, at the Medical University of Graz, Austria. Our conference theme is "Empowering Statistical Methods: Connecting Theory and Application." More information, e.g., the key dates, are available on our homepage: www.roes2025.at.

We are looking forward to welcoming you to Graz.



**Sonja Zehetmayer**
Biometric Bulletin Correspondent

## Brazilian (RBras)

### 68th RBras Annual Meeting



The 68th Annual Meeting of the Brazilian Region of the International Biometric Society (RBras) was held in the city of Piracicaba, State of São Paulo, between 29-31 May 2024. The organization of the event was in charge of the Brazilian Region of the International Biometric Society (RBras) and the Department of Exact Sciences, of the "Luiz de Queiroz" College of Agriculture from the University of São Paulo (LCE-ESALQ/USP), under the coordination of Professor Idemauro Antonio Rodrigues de Lara.

The event was attended by Tarylee Reddy, director of the South African Medical Research Council (SAMRC) and representative of IBS. The scientific program involved speakers from Brazil and abroad, consisting of two mini-courses, with 60 participants in

each of them, six guest speakers, four of whom were from abroad (Australia, England, Ireland and Germany), eight thematic sessions, 30 oral communications, 248 poster presentations, and a competition for theses, dissertations and monographs. The audience was composed of professors, researchers, undergraduate and graduate students, totaling 375 participants. The central theme of the event was "Data Science, Statistics and Graduate Studies: Opportunities and Challenges".

More information about 68th RBras can be found on the website, Idemauro A. R. de Lara
Coordinator of the Organizing Committee of the 68th RBras

**Change in RBras board of directors:**

During the 68th RBras, the RBras Assembly took place, and the new RBras board was sworn in, consisting of:

- President: Diogo Rossoni (UEM)
- Vice-president: Vanderly Janeiro (UEM)
- 1st Secretary: Agatha Sacramento Rodrigues (UFES)
- 2nd Secretary: Renata Alcarde Sermarini (ESALQ)
- 1st Treasurer: Lia Hanna Martins Morita (UFMT)
- 2nd Treasurer: Anderson Ara (UFPR)

We wish the new RBras board success and thank the previous board for the services provided.



**RBras Highlight Award 2024**
During the 68th RBras in Piracicaba-SP, RBras had the honor of granting the RBras Highlight Award 2024 to Prof. Dr. Clarice Garcia Borges Demétrio, professor at the "Luiz de Queiroz" College of Agriculture. With this award, we honor her exemplary trajectory, marked by tireless dedication to research and teaching in Statistics, in addition to her valuable services provided to RBras.

**69th RBras and 21st SEAGRO**
The 69th RBras (Brazilian Region of the International Biometric Society) and 21st SEAGRO (Symposium on Applied Statistics to Agricultural Experimentation) event will be held from 4-8 August 2025, in the city of Vitória (Espírito Santo State), Brazil, and is being organized by the Department of Statistics of the Federal University of Espírito Santo (UFES).

The theme of the event is "Data Science and Statistics at the Service of Sustainable Development." The official launch of the event website will take place in September 2024, but you can already follow the news on Instagram @rbras2025. We invite everyone to participate and it will be a pleasure to welcome you to the charming capital of Espírito Santo.



Agatha Rodrigues
Coordinator of the Organizing Committee of the 69th RBras and 21st SEAGRO

**Cristian Villegas and  Marcelo Andrade da Silva**
Biometric Bulletin Correspondent

## Central American and Caribbean (RCAC)

**Research Activities of Members**

Dr Novie Younger-Coleman was joint senior author with Professor Trevor Ferguson for a publication which featured examination of the relationship between social support and ideal cardiovascular health using data from a cross-sectional study of urban Jamaicans resident in Jamaica. Principal components analysis was used to create a social support score using three correlated variables, namely, network size, instrumental support and informational support. Survey weighted binary logistic regression models were used to assess the association between the social support score and ideal cardiovascular health with adjustment for age, sex and measures of socioeconomic status. The algorithms for multiple imputation by chained equations, available from the Stata software suite of commands, were used to replace missing values. The manuscript was accepted for publication in the PLOS Global Health Journal and was published in July 2024. The authors and title of the article are shown below.

Blake AL, Bennett NR, McKenzie JA, Tulloch-Reid MK, Govia I, McFarlane SR, Walters R, Francis DK, Wilks RJ, Williams DR, Younger-Coleman NO & Ferguson TS. "Social support and ideal cardiovascular health in urban Jamaica: A cross-sectional study. PLOS Global Public Health." 2024 Jul 30;4(7):e0003466.

**Novie Younger-Coleman Ph.D.**
Biometric Bulletin Correspondent

## Eastern Mediterranean (EMR)

ISCB45 (the annual conference of the international society for clinical biostatistics, with about 600 delegates from all over the world) was successfully held in Thessaloniki, GR (https://iscb2024.info/ ) with the participation of several members of the EMR-IBS (from Bulgaria, Greece, Israel, and Turkey) presenting pre-conference courses, oral talks and posters. Similarly, Greek Stochastics xi (with international participation) was held a few days earlier in the beautiful island of Folegandros (https://stochastics.gr/meetings/ksi/ ).

**Necla Kochan**
Biometric Bulletin Correspondent

## French (RF)

Some news from the French Region of the IBS "Société Française de Biométrie (SFB)"

Coming events of the French Region of the IBS include:

- The next edition of the annual joint conference of the "Statistics and Health" axis of the CNRS Math-Bio-Health thematic network, the group "Biopharmacy and Health" of the French Society of Statistics (SFdS) and the French Region of the IBS (SFB), to be held 21-22 November 2024 in Paris Santé Campus. The invited speaker for the SFB will be Julie Bertrand (Inserm IAME, Paris). Abstract submission

is welcome until 29 September 2024. More information on https://jdb2024.sciencesconf.org/.

- The awarding of the biennial Daniel Schwartz dissertation prize during the Young Researcher Day, to be held 22 January 2025 in Bordeaux, France.

More information can be found on our website: https://sfb.pages.math.cnrs.fr/asso/

**Anne Thiebaut**
Biometric Bulletin Correspondent

## Japan (JR)

**The 2024 Annual Meeting of the Biometric Society of Japan**
The 2024 Annual Meeting of the Biometric Society of Japan (BSJ) will be held on 10-11 May 2024 in hybrid combining online and onsite at the Centennial Hall Kyushu University School of Medicine, Fukuoka, Japan. Two special sessions on recent topics about heterogeneous causal effect estimation and strategies for personalized medicine and the BSJ Honorary Award will be organized. The tutorial seminar entitled "Model selection for high-dimensional data" will also be organized jointly with the Japanese Society of Applied Statistics.

**The 2024 Japanese Joint Statistical Meeting**
The BSJ is one of the six sponsoring organizations of the meeting and the 2024 Japanese Joint Statistical Meeting will be held on 1-5 September at Tokyo University of Science, Tokyo, Japan. The BSJ is organizing an invited session entitled "Infectious disease control and data science: From COVID-19 to the next pandemic." The society is also organizing an invited session in which the winner of the Young Biostatistician Award conferred by the society will present his/her research.

**The 2024 Biometric Lecture**
The first lecture, which was co-organized by Department of Biostatistics, Graduate School of Medicine, Hokkaido University, was held on 4 March 2024 in hybrid combining online and onsite at Hokkaido University, School of Medicine, Centennial Hall, Sapporo, Japan, where Dr. Thomas Scheike (University of Copenhagen) provided a great lecture, entitled "Analyzing recurrent events in the context of randomized clinical trials." The second lecture, which is co-hosted by Research Center for Medical and Health Data Science, the Institute of Statistical Mathematics, will be held on 29 July 2024 in hybrid combining online and onsite at Meeting Space AP Nishi-Shinjuku, where Dr. James M. S. Wason (Newcastle University) will give an excellent lecture, entitled "Making more rare disease trials feasible with innovative statistical methods".

**Takashi Daimon**
Biometric Bulletin Correspondent

## The Netherlands (ANed)

https://www.vvsor.nl/biometrics/



In this issue, we are thrilled to look back on a successful spring meeting in honor of the 2022 Hans van Houwelingen Biometry Award won by **Anirudh Tomer** (Erasmus MC) for his paper with Dimitris Rizopoulos, Ewout Steyerberg, Daan Nieboer and Monique Roobol: "Shared decision making of burdensome surveillance tests using personalized schedules and their burden and benefit" published in 2022 in Statistics in Medicine. The meeting was hosted on Thursday, 20 June 2024, at Erasmus MC in Rotterdam with the theme "Statistical and Machine Learning Methods for Sequential Decision Making". The winning authors have put together an exciting program on this topic with invited speakers: **Zhenwei Yang** (Department of Biostatistics, Erasmus MC), **Nina Deliu** (Department MEMOTEF Sapienza University of Rome) and **Thomas Klausch** (Department of Epidemiology and Data Science, Amsterdam University Medical Centers). Approximately 50 participants attended the event.



The General Members Assembly preceded the spring event, where we discussed several topics such as: the meetings and online seminars we organized last year, discussion and approval of finances, and changes in the board. **Mark van de Wiel** (Amsterdam UMC) has completed his term as President of BMS-ANed. Mark has been actively involved in all aspects of our society's activities, ensuring that we remain connected and vibrant even during the challenging times of the COVID lockdowns. Your dedication and contribution are greatly appreciated Mark! **Marianne Jonker** (Radboud UMC) has succeded Mark. All the best, Marianne, in this new role, and we are confident that the society will remain active and engaged. We have also welcomed two new members: **Wouter van Amsterdam** (Utrecht UMC) and **Sara Baart** (Erasmus MC). Best wishes to both for a successful and enjoyable term!

Finally, for our next BMS-ANed activity, we are honoured that Wouter van Amsterdam from the University Medical Center in Utrecht will give the ninth online seminar in the Biostatistics Seminar Series on Thursday, 26 September 16h-17h on: **"AI in healthcare."** The abstract and link to follow Wouter's talk will  soon appear online. The seminars aim at a broad biostatistical audience, in particular PhD students. An update will follow on the next issue!



**Roula Tsonaka**
Biometric Bulletin Correspondent

## Spanish (REsp)

The Spanish region will be hosting joint webinars with the Easter-Mediterranean and Italian and IBS regions. Join us on Friday, 25 October at 10:00 a.m. (CET) for a  webinar titled, "Genome-Wide Genetic Models for Association, Heritability Analyses and Prediction." Featured speakers include Professor M. Luz Called with Universitat de Vic and Professor David J. Balding with the University of Sydney.  Register today.

**Ester Boixadera**
Biometric Bulletin Correspondent

## Western North American (WNAR)

**2024 WNAR/IMS/Graybill Meeting**

The 2024 Annual Meeting of the WNAR/IMS was a joint conference with the Graybill Conference hosted by Colorado State University in Fort Collins, Colorado hosted from 9-12 June and was one of the largest annual meetings to date with 435 participants.

Robert L Santos, Director of the U.S. Census Bureau, gave the WNAR Plenary and Presidential Address entitled "Serving Through Leadership: My Approach to Heading a Federal Statistical Agency"

and Scott Evans, Professor at George Washington University, gave the Graybill Keynote "The order of operations is important: it is time to correct the clinical trial arithmetic." The theme of the Graybill Conference was "Rare Disease Drug Development."



*Past, Current, and Future Presidents of WNAR at the WNAR 2024 Meeting*

An important activity of the annual meeting is the student competition paper. Forty-two students participated in the 2024 WNAR Student Award Competition. The winners of the Student Paper Award were Leah Andrews (University of Washington) "Semiparametric Methods for Evaluating COVID-19 Vaccine Regimens in Test-Negative Designs", and Navneet Hakhu (University of California Irvine) "Censoring-Robust Estimation in Time-to-Event Clinical Trials with Adaptive Randomization", and Robin Liu (University of California Santa Barbara) "Natural Covariate-adjusted Gaussian Graphical Regression." The winner of the Student Presentation Award was Evan Sidrow, University of British Columbia, "Stochastic Optimization for Efficient Inference in Ecological Hidden Markov Models"



*Student Competition Award Ceremony, Participants, Awardees, and Judges*

Three short courses were offered: "N-of-1 Trials for Personalized Healthcare" presented by Christopher Schmid (Brown University), "Small Sample, Sequential, Multiple Assignment, Randomized Trial (snSMART) Designs and Methods for Chronic, Rare Disease Drug Development" presented by Kelley Kidwell (University of Michigan), and "Bayesian Borrowing Techniques for Rare Disease Clinical Research" presented by Joseph Koopmeiners and Steffen Ventz (University of Minnesota).

WNAR thanks the WNAR Program Chairs, Prince Allotey (UW) and Cateherine Lee (Kaiser Permanente), the IMS Chair Jie Peng (UC Davis), Local Organizer Wen Zhou (Colorado State University), and Jingling Ye (BeiGene) the Graybill Program Chair, for all their efforts to make this joint conference a great success.

**WNAR Diversity Workshop**

The 2024 WNAR Diversity Workshop was the first satellite workshop held in conjunction with WNAR for underrepresented students, and it emphasized the importance of mentorship and belonging in the health and science fields as well as introduced various data-centered career pathways over two days. For many of the 16 participants, it was the first time they had attended a scientific conference, and we received many positive comments about how the workshop was organized and facilitated. Most of the students (8 undergrad and 7 grad) were studying in Colorado, and we had many mentors (of the 14 total) who were affiliated with Colorado universities who joined us for our matched-mentorship program. The workshop featured panels on mentorship, training opportunities, career pathways, and graduate school experiences; over 20 panelists shared their advice, including some participants themselves. The workshop also included a "Disparities in Epilepsy" research talk by Dr. Sonal Bhatia and a "Fireside Chat with Rob Santos", where the Director of the US Census Bureau shared his inspiring life story and advice to bring our whole selves, including our lived experiences and training, into our careers. Attendees had the chance to participate in the Diversity Workshop networking session, WNAR Mixer, and WNAR Student Pizza Social to engage with a wide variety of (bio)statisticians and data scientists.

The 2024 WNAR Diversity Workshop was made possible by many local and WNAR volunteers, including the WNAR Justice, Equity, Diversity, and Inclusion (JEDI) Committee and Leadership committee. Special thanks go to Elizabeth Juarez-Colunga, Megan Othus, Jan Dasgupta, Natalie Gasca, Prince Allotey, Audrey Hendricks, and Lala Kaizer for their coordination efforts. We are excited to continue this program at the next WNAR conference, with a focus on promoting opportunities, mentoring, and sharing experiences with students from historically underrepresented groups. These types of workshops are critical to foster a welcoming environment for the next generation of diverse data-focused professionals.



*WNAR Diversity Workshop Indigenous Student Travel Award*

Congratulations to Kyle Conniff who is our first awardee of the WNAR Indigenous Student Travel Award! Kyle Conniff is a Ph.D. candidate of Statistics at the University of California Irvine, and he is a member of the Menominee Indian Tribe of Wisconsin.

WNAR offers multiple travel awards for Indigenous students from within the WNAR region to attend our annual conference. Awards up to $1,000 are available for conference travel and lodging related expenses. Eligible students include Indigenous peoples of North America and the Pacific Islands.

**2024 IBS/WNAR Outstanding Impact Award and Lectureship Recipient**

The 2024 WNAR/IBS Outstanding Impact Award and Lectureship recipient was announced in the opening remarks. Congratulations to Dr. Robert Tibshirani of Stanford University. Dr. Tibshirani's nomination package clearly demonstrated his highly impactful research contributions to the fields of biometrics and science at large. The LASSO, his most renowned contribution, has ignited an entirely new realm of research and applications from genomics to finance, and is a cornerstone of the modern data science. As a recipient of the award, Dr. Tibshirani gave a talk in the WNAR Outstanding Impact Award Lecture at the JSM entitled "Cooperative learning and cooperative components analysis."

The WNAR of IBS Outstanding impact and Lectureship Award was established in 2021 to recognize an outstanding individual or team, regardless of race, gender, sexual orientation, nationality or citizenship, who has made a significant impact on our society through service and/or research in the development and application of statistical, mathematical, and data science theory and methods in the biomedical or environmental sciences. A significant impact can comprise either a single contribution of extraordinary merit or an outstanding aggregate of contributions that significantly impacts to biosciences and environmental sciences.

**2025 IBS/WNAR Outstanding Impact Award Nominations Due 1 November 2024**

WNAR members, please plan to submit nomination materials for the 2025 award by 1 November 2024. We look forward to recognizing our outstanding members with this honor. More information about the award process can be found on the WNAR award website: https://wnar.org/IBS/WNAR-Outstanding-Impact-Award

**New WNAR/IBS Early Career Membership Level**

WNAR has developed a transitional membership level for new graduates that will be a reduced cost compared to a regular member level. This will be available in October for the 2025 annual memberships. The membership includes WNAR and IBS voting rights, electronic access to Biometrics, JABES and Biometric Bulletin, and discounted conference registration fees.

Qualifications: Graduation from a degree program in the prior 3 years. The early career member could have graduated from a WNAR-region university or moved to the WNAR region after graduation. Graduation year is required to be entered into the renewal form. Prior WNAR or IBS membership is not required.
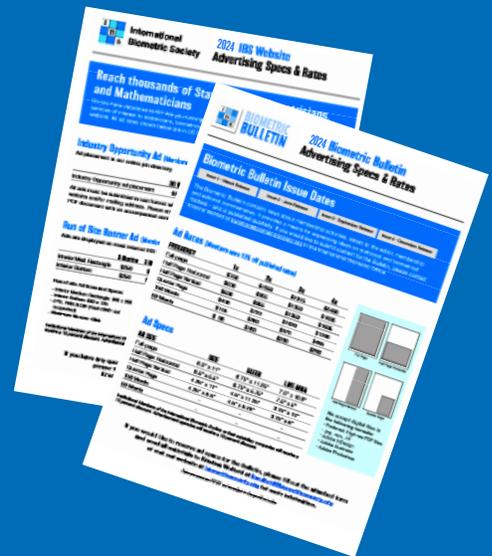
**2025 WNAR/IMS Meeting**

The 2025 WNAR/IMS meeting will be in Whistler, BC, Canada, from 15-18 June 2025. Registration information and other details about the meeting will be available on the WNAR web page www.wnar.org.

**Jessica Minnier**
Biometric Bulletin Correspondent

# Announcements & Upcoming Events

**IBS, IBS Regional and Non-IBS Events and Meetings**

**Journal Club**
18 October 2024 | 15:00 UTC
(11:00 Eastern U.S./Canada time)
*Members and Non-members are invited to register.*
"Summary statistics knockoffs inference with family-wise error rate control" (*Biometrics*, September 2024)
Presenter: "Jiaqi Gu," Stanford University
Discussant: "Zhimei Ren," University of Pennsylvania
Register today!

**Distinguished Lecture Series**
1 Nov 2024 at 8:30 am (AEDT) | 31 October 21:30 (GMT) | 31 October 17:30 pm (EDT)
**Distinguished Lecture Series**
*Members and Non-members are invited to register.*
The International Biometric Society is pleased to announce the presenter for our first Distinguished Lecture of 2024 will be Francis KC Hui, Associate Professor in Statistics, The Australian National University. We are excited to continue the success of our Distinguished Lecture Series with another accomplished professional and speaker.
Register today!

**32nd International Biometric Conference (IBC2024)**
8-13 December 2024 | Atlanta, Georgia USA
Register today!

**Distinguished Lecture Series**
31 January at 2:00 (AEDT) | 30 January at 18:00 (EDT) | 30 January at 11:00 (PT)
*Members and Non-members are invited to register.*
The International Biometric Society is pleased to announce the presenter for our first Distinguished Lecture of 2025 will be Sherri Rose, PhD is a Professor of Health Policy and Director of the Health Policy Data Science Lab at Stanford University. We are excited to continue the success of our Distinguished Lecture Series with another accomplished professional and speaker.
Register today!

**View the full meetings** calendar here!

**IBS, IBS Region and Non-IBS Events and Meetings**

**View the full meetings** calendar here!

Is something missing? Would you like to add your meeting or event to our calendar?
If so, please send an email to IBS@biometricsociety.org

1. Event Title
2. Event Description & Location
3. Event Category (IBS Regional Event, IBS Event, Non-IBS Event)
4. Event Link
5. Start/End Date

## Professional Employment Opportunities

## Get Connected!

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