# 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

My best wishes to all of a great start in a hopefully peaceful and happy New Year. For me, it will be a rather exciting year: After having had kind of a one-year training on the job under the guidance of José Pinheiro, my presidency started on the 1st of January.

I would like to take this opportunity to thank José, but also the other Officers, Vicente Núñez-Antón and Henry Mwambi, and, in particular, Peter Doherty from the International Business Office (IBO) for their patience and support during my year as Incoming President. I am grateful to José who was a wonderful President, smoothly navigating our society with great care through different "thunderstorms." His calm and friendly manner reassured us during stressful situations. I would also like to thank Henry for his great job as secretary, always keeping us focused on our tasks. And a big Thank You to Vicente who has been an impressive treasurer, diligently taking care of our budget in so many difficult situations and always finding the best solution to follow.

I would also like to welcome our new secretary, Tarylee Reddy (South African Region), and our new treasurer, Sarah Ratcliffe (ENAR). I am looking forward to working with both of them and with our Outgoing President and Outgoing Treasurer, José and Vicente, who will still support us during their last year as IBS Officers.

As José mentioned in the last President´s Corner, there have been a lot of changes in the composition of our standing committees. Just recently, all rosters for the 2024 governance year have been approved by the Executive Board. I won't be able to mention all of these changes here, but would like to thank all committee members for their strong commitment to the society. In addition, let me briefly introduce the new committee chairs and thank those who have finished their respective terms. Let´s start with the Awards Fund Committee: Vilda Purutcuoglu (Eastern Mediterranean Region) has accepted our invitation to serve as chair for a second term. Thank you, Vilda, so much for your great engagement. As chair of the Budget and Finance Committee, Nandita Mitra (ENAR) had a role of great responsibility and smoothly worked together with Vicente in getting our financial issues perfectly sorted out, always in a timely fashion. Thank you, Nandita, for your dedication. Marc Henrion (South African Region), who has been a member of this committee for several years and knows very well what to do, will become the new chair. He will work together with Sarah in this important position. Thank you, Marc, for taking over. A big Thank You also to Stephanie Roll (German Region), who has finished her second term as a very active chair of the Committee on Communications, and to Alex Kaizer (ENAR), who now serves as the new chair. Florian Frommlet (Austro-Swiss Region) has taken over the position as chair of the Conference Advisory Committee from Satoshi Hattori (Japanese Region) who impressively filled this important position for two consecutive terms. Thank you,

*Continued on p. 4*

## IN THIS ISSUE

# BIOMETRIC BULLETIN

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International Biometric Society
1120 20th Street, NW, Suite 750 • Washington, DC 20036-3441 USA
Telephone: +1 (202) 712-9049 • Fax: +1 (202) 216-9646
Email: ibs@biometricsociety.org Website: http://www.biometricsociety.org





## Region Key

### Regions

RArg - Argentinean Region
AR - Australasian Region
ROeS - Austro-Swiss Region
RBe - Belgian Region
GBot - Botzwanian Region
RBras - Brazilian Region
BIR - British and Irish Region
RCAC - Central American-Caribbean Region
GCmr - Cameroon Region
GCl - Chilean Region
GCmr - Cameroon Region
CHINA - Chinese Region
EMR - Eastern Mediterranean Region
ENAR - Eastern North American Region
ECU - Ecuadorian Region
GEth – Ethiopian Region
RF - French Region
DR - German Region
GGha - Ghanian Region
IR - Indian Region
RItl - Italian Region
JR - Japanese Region
GKe – Kenyan Region
RKo - Korean Region
GMal - Malawi Region
GNi – Nigerian Region
NR - Nordic-Baltic Region
PKSTAN – Pakistani Region
GPol – Polish Region
GRo – Romanian Region
SING – Singaporean Region
GSaf – South African Region
REsp - Spanish Region
ANed - The Netherlands Region
GUgan – Ugandan Region
WNAR - Western North American Region
GZim – Zimbabwean Region

### Networks

CEN - Central European Network
CN - Channel Network
EAN – East Asian Network
SUSAN - Sub-Saharan Network


8-13 December 2024 | Atlanta, USA

# CONTRIBUTE TO IBC2024

## SUBMIT YOUR ABSTRACTS BY 25 MARCH 2024

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.

### CALL FOR ABSTRACTS

The International Biometric Society (IBS) is currently seeking abstracts for contributed oral and poster presentations. Contribute to statistical and mathematical theory and methods across the biosciences and allied disciplines.

### SUBMISSIONS FROM A BROAD RANGE OF PERSPECTIVES ARE ENCOURAGED.

*Suggested Topics:*

- Bayesian Methods
- Big Data Analytics
- Bioinformatics
- Biological Networks
- Categorical Data Analysis and Discrete Models
- Causal inference
- Clinical Trials
- Computer Intensive Methods and Software Development
- Diagnostic Testing
- Genetics
- Imaging and Signal Data
- Infections, Diseases, and Control
- Joint Outcome Models
- Longitudinal Data Analysis/Mixed Effects Model
- Machine Learning
- Mechanistic Models
- Microarrays and Omics data
- Missing and Incomplete Data
- Mixture Models
- Multiple Testing and Adjustments for Multiplicity
- Multistate models
- Other Biometrical Related Topics
- Predictive Modelling
- Quantile Regression
- Risk Analysis and Risk Management
- Small Area Estimation
- Spatial and Spatio-Temporal Modelling
- Survival Analysis
- Validity and Reliability of Measurements
- Visualization and Graphical Statistics

**DEADLINE: 25 MARCH 2024 -** Online only, up to 2,500 characters

ibc2024.abstractcentral.com

IBC Registration Opens Soon! www.ibc2024.org

# President's Corner

*Continued from p. 1*

Satoshi and Florian! Hans-Peter Piepho (German Region) did a wonderful job as chair of the Editorial Advisory Committee (EAC), in particular during the critical search period for a new publisher of our flagship journal *Biometrics*. Ronald Geskus (The Netherlands Region) has accepted to serve as the new EAC chair. Thank you so much, Ronald.

Last, but not least, the Education Committee (EC) was chaired for two terms by Annette Kopp-Schneider (German Region), who was heavily committed (among other tasks) to put together the short course program for our IBCs. Rafael de Andrade Moral (British-Irish Region) has agreed to serve as new EC chair, and I am grateful to both of them. If you are interested in learning about the committees´ activities during last year please visit the IBS website.

The planning for IBC 2024 in Atlanta is making great progress. The International Program Committee (IPC), led by its chair, Dimitris Rizopoulos (The Netherlands Region), has completed the invited sessions program. The call for contributed abstracts was launched on 18 December, with already a remarkable number of abstracts having been submitted. The short course program has also now been finalized. A showcase session will be organized where the prizes for the two best papers published in *Biometrics* and *JABES* over the past two years will be awarded. A new evergreen IBC logo has been developed by the IBO and has received a lot of positive feedback, being already featured at the IBS website. The social events are in the planning stage, with the fascinating Georgia Aquarium having been chosen as the location for the conference dinner. As Organizing President, José Pinheiro is overseeing all tasks with the great support from the Local Organizing Committee (LOC) and Alexander Iula from IBO, such that IBC 2024 should be an exciting event and a successful conference.

I am also extremely grateful that the IBS has been successful in identifying further countries that are interested in becoming a new IBS region as, for instance, Cameroon has recently done. I am confident that further regions will join our society in the near future.

If you have read these greetings carefully, you may have noticed that the team of new IBS Officers is entirely female. Although it would likely not be mentioned in particular, or even noticed if all new Officers were male, but in my view it clearly demonstrates the openness and diversity of our IBS community. I highly appreciate that our scientific community is operating worldwide and that we as scientists are cooperating with each other irrespective of a scientist´s gender, sexual orientation, or ethnicity. In these times, where a move towards populist politicians is taking place in many countries worldwide, it is important that we as scientists make a clear statement in favor of diversity of cultures and backgrounds.

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

# From the Editor

Of course, it's with Divine grace that I am writing an editor's column on 8th March, the international Women's day. While going through the very first write-up for the President's corner by Prof Dr Iris Pigeot, that takes due care of compliments and greetings to various IBS office bearers, I am fascinated in reading the last-closing paragraph. The interesting observation made by her is reproduced verbatim; "If you have read these greetings carefully, you may have noticed that the team of new IBS Officers is entirely female"- – - --. Though on one side it's reflecting on the functioning of the vibrant system of the Society, it also reminds us about the inherent incredible power of women.

A brief note by Peter Doherty highlighting the fortieth anniversary of *Biometric Bulletin* (BB) and enthusing young members is worth reading. We feel happy that the event has gained space in Prof Lynne Billard's recent book. The background information search for the origin of BB was started by me in April-May 2023, when we entered the 40th year. The Editor's column in issues- 2 & 3, Vol 40 of the Bulletin had a brief mention about the initiative taken by the IBS leadership towards its launching in May 1984. We once again like to express our sincere gratitude to earlier editors of the Bulletin and others who had helped significantly in shaping it in whatever ways to its present status. The special initiative and efforts taken by IBO in the recent past in completing the task of posting copies of all volumes and issues of the Bulletin on the website deserve appreciation.

Recently we lost two eminent stalwarts of yesteryears. The dedicated tributes in honor of Peter Armitage and Richard Tomassone are quite motivating to all of us. Their contributions to the Society and Statistical sciences are great and everlasting imprints on the academics of Biometrics. They have certainly dedicated themselves to be an honest role model for us.

As already mentioned in the previous issue, a review of the extra efforts put in by me inviting discussions on some basic theme issues during 2019-21 is desirable during my last year as Editor- BB. In continuity with touching on theme-I on nomenclatures used for Biometrics in the previous issue, we may recall Basic Theme - II (BB Vol 36-2) where the reader's responses were invited on uncertainty and variability issues.

*"It is said that Nature is constantly evolving, and we do have to surrender to the dynamic nature of our Universe in response to many happenings that are beyond our expectation and prediction framework or control. Continuous changes in Nature over time bring uncertainty and variability in each and every sphere of life as well affect the objects and subjects of*

*interest in various Sciences. Even some of the well-known and tested principles and laws of basic Sciences do fail with the test of time. This uncertainty and variability prevalent in nature makes it difficult to satisfy our inner urge of acquiring knowledge of objects and subjects around and surrounding us and also to decode the mechanism involved during travel from cause to effect. Encountering the uncertainty and variability and thereby understanding their role in rational explanation of the facts becomes the basic feature of all sciences. However, there are two schools of thought – – –".*

The response to the Editor's column in the subsequent issue-III highlighted an article by Prof Kuldeep Kumar from Australia;

*"In 2016 I had the opportunity to review the book "A Certain Uncertainty: Nature's Random Ways" by M P. Silverman, 2014 published by Cambridge University Press, for the Journal of the Royal Statistical Society. – – – — However, in most real-life situations we deal with random experiments, and we always calculate the probability of the event in the context of random experiments only. I do not agree with the editor's example, "the sun will rise tomorrow from the east is certain." This is a universal truth rather than a random experiment, so we should not calculate the probability! "*

**Ajit Sahai**
Biometric Bulletin, Editor

# Update from the IBO

Ever since the early eighties and Herb David's tenure as President of the Society, the *Biometric Bulletin* has been published as a means of delivering Society news and announcements, Region news, member news, appropriate advertisements, non-technical letters to the Editor, and any similar content to members on a quarterly basis.

Professor Lynne Billard recently shared the history of this publication as part of her book, *The History of the International Biometric Society*. And believe it or not, we are now approaching the 40th anniversary of the first publishing of the *Biometric Bulletin*!

Quite recently, a task was undertaken to post copies of all available volumes and issues, including those originally only available in print, to the IBS website. We are pleased to report that this task has been completed! The *Bulletin* provides a venue for members and others to express ideas on statistical and biometrical matters and is still an exclusive member service after forty years. We encourage you to *explore this content yourself*! The latest issue is now available, of course. But just for fun, and if you're one of our younger members, why not check out the issue published the same year that you were born, or the year that you received your last (or first) degree? The *Biometric Bulletin* provides a useful look at the history of the Society and a unique historical reference for all of us. We hope you will enjoy this newly expanded members-only collection.

**Peter Doherty**
Executive Director

# Support the IBS Travel Fund

The Society is currently accepting donations to the Travel Awards Fund for activities taking place in 2023. Donations are being accepted through May 1, 2024.

As part of an effort to support biometric activities of members in lower and middle-income countries (LMICs), your donations help support the allocation of travel grants to allow members to attend scientific conferences and collaborate with other members. During odd-numbered years, the funds collected are specifically used to offer opportunities to attend IBS Region and Network conferences.

The Travel Awards Fund supports IBS members from LMIC countries with access to travel grants, if unavailable from their own countries or institutions, and external sponsorship is needed. The Society has instituted a Matching Funds Program. For every dollar (USD) a Region or individual donates, IBS will match it up to a specified amount in the annual budget. This means that we have the potential to enable more people from eligible countries to attend sponsored conferences. Donations are vital for the continued success of this program as the IBS is typically able to fund less than half of the applicants who apply. We are deeply appreciative of donations from Regions, and individual members, which helps us increase our membership in LMICs and serve our global audience. Donate today!

Here are a few testimonials from recipients of the 2023 IBS Travel Award Fund.

- *It is with all sense of appreciation and gratitude that I was given the first opportunity in my life by IBS to attend an international conference in Ghana (IBS-SUSAN) 2023. My experiences in Ghana were marvelous. From the registration, conference presentations and excursions. I enjoyed every bit of the programme. Also, I met several scientists and researchers with wonderful presentations which I am sure will assist me in my career as a researcher. I also create a network of researchers for further collaborations. –IBS Member, Nigerian Region*

- *I am writing to express my sincerest gratitude for selecting me as a recipient of the travel award for participation in the workshop and conference. It is truly an honor to be chosen among the many deserving applicants. I cannot emphasize enough how grateful I am for this opportunity. Attendance at this conference holds immense value for me, both professionally and personally. –IBS Member, India Region*

- *Overall, the conference provided a unique opportunity for professionals in the field to stay updated on the latest developments, exchange knowledge, and build connections with peers from around the world. It was a truly rewarding experience and has contributed significantly to the advancement of biostatistics and biometric research. Looking forward to the next conference. I am confident that the knowledge gained and the connections made at this event will continue to have a positive impact on my work and the broader field of biostatistics and biometrics. –IBS Member, Tanzania Region*


32nd International Biometric Conference
8-13 December 2024 • Atlanta, USA

# JOIN US IN ATLANTA,

for an enriching educational experience where members of the International Biometric Society (IBS), along with statisticians, mathematicians, biological scientists, students, and enthusiasts of interdisciplinary efforts, come together to advance the understanding and application of biosciences.

## SHORT COURSES

Four half-day and four full-day Short Course proposals have been selected for presentation just before the International Biometric Conference begins. All Short Courses will take place on 8 December 2024. These courses are taught by experienced professionals who are experts in their fields, so you do not want to miss out!

## INVITED SESSIONS

The 25 sessions include a wide range of topics, including ecology, clinical trials, general modelling approaches, health, epidemiology, and environmental health. Congratulations to the following!

## CONTRIBUTED SESSION PROGRAM

IBS invites abstracts for contributed oral and poster presentations for the 2024 International Biometric Conference (IBC2024) to be held in Atlanta from 8-13 December 2024. Abstracts may be submitted online through 25 March 2024.

**The Atlanta Marriott Marquis is the host hotel for IBC 2024 and all scientific sessions will take place at this location. We highly encourage all attendees to book at the host hotel.**

**HOTEL CUT OFF DATE IS 14 NOVEMBER 2024.**
After this date our group rate is not guaranteed.

**More information available at https://www.ibc2024.org**

# Editorial Updates

## Biometrics

Recent papers in Biometrics

**The following papers are being published in Biometrics Methodology:**

- "Randomized phase II selection design with order constrained strata," by Yi Chen and Menggang Yu;
- "Principal stratification analysis of noncompliance with time-to-event outcomes," by Bo Liu, Lisa Wruck, and Li Fan;
- "Inferring HIV transmission patterns from viral deep-sequence data via latent typed point processes," by Fan Bu, Joseph Kagaayi, Mary Kate Grabowski, Oliver Ratmann, and Jason Q. Xu;
- "Multi-objective tree-based reinforcement learning for estimating tolerant dynamic treatment regimes," by Yao Song and Lu Wang;
- "A flexible framework for spatial capture-recapture with unknown identities," by Paul van Dam-Bates, Michail Papathomas, Ben Stevenson, Rachel Fewster, Daniel Turek, Frances Stewart, and DavidBorchers;
- "Clustering blood donors via mixtures of product partition models with covariates," by Raffaele Argiento, Riccardo Corradin, Alessandra Guglielmi, and Ettore Lanzarone;
- "A generalized Phase 1-2-3 design integrating dose optimization with confirmatory treatment comparison," by Yong Zang, Peter F. Thall, and Ying Yuan;
- "Penalized deep partially linear Cox models with application to CT scans of lung cancer patients," by Yuming Sun, Jian Kang, Chinmay Haridas, Nicholas R. Mayne, Alexandra L. Potter, Chi-Fu Jeffrey Yang, David C. Christiani, and Yi Li;
- "A rank-based approach to evaluate a surrogate marker in a small sample setting," by Layla Parast, Tianxi Cai, and Lu Tian;
- "From local to global gene co-expression estimation using single-cell RNA-seq data," by Jinjin Tian, Jing Lei, and Kathryn Roeder;
- "Using instrumental variables to address unmeasured confounding in causal mediation analysis," by Kara E. Rudolph, Nicholas Williams, and Ivan Diaz;
- "Multiply robust estimators in longitudinal studies with missing data under control-based imputation," by Siyi Liu, Shu Yang, Yilong Zhang, and Guanghan (Frank) Liu;
- "Two-phase designs with failure time processes subject to non-susceptibility," by Fangya Mao, Li C. Cheung, and Richard J. Cook;
- "High-dimensional sparse vine copula regression with application to genomic prediction," by Ozge Sahin and Claudia Czado;
- "Semi-supervised transfer learning for evaluation of model classification performance," by Linshanshan Wang, Xuan Wang, Katherine P. Liao, and Tianxi Cai;
- "Comparing two spatial variables with the probability of agreement," by Jonathan Acosta, Ronny Vallejos, Aaron M. Ellison, Felipe Osorio, and Mario de Castro; and
- "A boosting method to select the random effects in linear mixed models," by Michela Battauz and Paolo Vidoni.

**Recent articles in the Biometric Practice section of the journal include:**

- "Individualized treatment rule characterization via a value function surrogate," by Nikki L. B. Freeman, Sydney E. Browder, Katharine L. McGinigle, and Michael R. Kosorok;
- "Quantifying the HIV reservoir with dilution assays and deep viral sequencing," by Sarah C. Lotspeich, Brian D. Richardson, Pedro L. Baldoni, Kimberly P. Enders, and Michael G. Hudgens;
- "That's not the Mona Lisa! How to interpret spatial capture-recapture density surface estimates," by Ian Durbach, Rishika Chopara, David L. Borchers, Rachel Phillip, Koustubh Sharma, and Ben C. Stevenson;
- "Estimating the effect of latent time-varying count exposures using multiple lists," by Jung Yeon Won, Michael R. Elliott, Emma V. Sanchez-Vaznaugh, and Brisa Sanchez;
- "Merging or ensembling: integrative analysis in multiple neuroimaging studies," by Yue Shan, Chao Huang, Yun Lia, and Hongtu Zhu;
- "Estimation of the causal effects of time-varying treatments in nested case-control studies using marginal structural Cox models," by Yoshinori Takeuchi, Yasuhiro Hagiwara, Sho Komukai, and Yutaka Matsuyama; and
- "Bayesian two-stage modeling of longitudinal and time-to-event data with an integrated Brownian motion covariance structure," by Anushka Palipana, Seongho Song, Nishant Gupta, and Rhonda Szczesniak.

### Editorial Board News

Co-Editor William (Bill) Rosenberger's (ENAR, based in the USA) term concluded on 31 December 2023. We thank Bill for exemplary service to Biometrics! He was succeeded by Erica Moodie (ENAR, based in Canada) who will serve as Co-Editor for the years 2024 – 2026. Further, at the end of 2024, Katja Ickstadt (German Region) will conclude her three-year term, so her successor must be identified. We follow the geographical convention that has been in place since the inception of the three CE system, which dictates that at any time the three CEs are from Europe, North America, and locations outside of Europe and North America. Katja is from Europe, so she should be succeeded by a new CE from that same part of the world. A search committee will soon be formed, consisting 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); and members from the Editorial Advisory Committee, to be identified by the Executive Editor and the EAC Chair, and to be approved by the Executive Board. The full composition of the search committee and the result of the search will be reported in a future column.

Associate Editors (AEs) for *Biometrics* serve two-year, renewable terms that start on 1 July of each year. Each year, roughly half of the AEs have terms ending on 30 June; accordingly, each Spring, the Co-Editors review the expertise of the current AEs and submission trends with an eye toward possibly bringing on new AEs with expertise that is underrepresented or may be lost by AE retirements. The CEs welcome suggestions at any time from the IBS membership regarding individuals who may be excellent choices to serve as AEs. Please send suggestions, along with a CV or URL where the individual's qualifications may be found, to the journal Editorial Managers, (Ms. Chantal Brodie and Ms. Ann Hanhart), at biometrics@biometricsociety.org. Self-nominations will be considered.

*Biometrics* is intimately linked with its parent International Biometric Society. There is continual interaction between the journal and several constituencies within IBS, such as the Society's leadership, the International Business Office, and the organizers of the biennial IBCs. But there is a special and strong relationship with the Editorial Advisory Committee, a body that oversees, among others, policies and practices related to the journal. The EAC chair, Hans-Peter Piepho (German Region) concluded his term of service at the end of 2023 and we would like to wholeheartedly thank Hans-Peter for a wonderful and very effective collaboration. There was a seamless transition to the incoming chair and former member of the EAC, Ronald Geskus (Netherlands Region). We are off on a good start and look forward to working with Ronald in years to come.

### Awards for Excellent Refereeing for Biometrics

As of 2022, the three Co-Editors identify three colleagues that have done outstanding refereeing work for the journal over a given calendar year. The three awardees for 2022 are: Zach Branson (Carnegie Mellon University, Pittsburgh, Pennsylvania), Tian Gu (Harvard University, Boston, Massachusetts), and Chris Jennison (University of Bath, UK). The three awardees for 2023 are: Shaun Seaman (MRC Biostatistics Unit, University of Cambridge, UK), Kevin Lin (University of Washington, Seattle), and Niccolo' Anceschi (Duke University, North Carolina). Congratulations to all, together with a word of thanks to them and everyone who has dedicated time and expertise to the journal's peer review process. These six awardees will be presented with a certificate during the International Biometric Conference in Atlanta, Georgia, 8-13 December 2024.

Best Papers in Biometrics by IBS Members Award

In even numbered years, two papers are selected by the Co-editors for the honor of "Best Paper in Biometrics by IBS Members" award, for each of the two immediately preceding years. Papers are eligible with at least one author who is an IBS member.

The selection for this round is:

- Guo, C., Kang, J., and Johnson, T.D. (2022). A spatial Bayesian latent factor model for image-on-image regression. *Biometrics*, 78, 72-84.
- Shepherd, B.E., Han, K., Chen, T., Bian, A., Pugh, S., Duda, S.N., Lumley, T., Heerman, W.J., and Shaw, P.A. (2023). Multiwave validation sampling for error-prone electronic health records. *Biometrics*, 79, 2649-2663.

Congratulations to both author teams! We are delighted that both papers will be presented at the IBC2024 in Atlanta, Georgia in the so-called *Biometrics* Showcase Session. We hope to see many of you in Atlanta, especially in the Showcase Session.

### *Biometrics* Twitter Account

Kindly be reminded of our twitter account:
https://twitter.com/Biometrics_ibs

**Geert Molenbergh**
Biometrics Executive Editor

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

We are currently running the following two special issues with related information and open calls published here.

a) Special Issue on The Hawkes Process: Theory, Methodology, Algorithms, Extensions, and Applications in Environmental Sciences. Point process models are common in research as a natural tool to describe the patterns of discrete events that occur in a continuous space, time, or a space–time domain. In recent decades, the Hawkes point-process model, which was proposed by Alan G. Hawkes in the 1970s, has become one of the most useful point processes in event-type data analysis, such as earthquakes, crimes, forest fires, terrorist attacks, society networks, genomes, etc., due to its powers in detecting the clustering effect and the positive interactions among individual events/particles. Equipped with the Hawkes process and general statistical inference tools, we can determine the potential causal relationship among discrete events, especially for nowadays, with the rapid development of observation and data-storage technologies, big data has unavoidably become a hot issue in point-process data analysis. As the Hawkes process provides us with a quick tool and general framework to quantify and forecast the clustering or the triggering effect among events, it is important for us to develop more advanced theory, methodology and algorithms related to this process and its extensions, so that we can solve the challenging problems that are encountered in its applications.

*Guest Editors: Jorge Mateu, Jiancang Zhuang, Feng Chen, Rick Schoenberg, Jing Chen*

**Deadline for submission: February 29, 2024**

b) Special Issue on New Perspectives in Statistics, Data Science and Econometrics for Agriculture, Land Use and Forestry. Human activities impact terrestrial sinks, through land use, land-use change and forestry (LULUCF), altering the carbon cycle between the terrestrial biosphere and the atmosphere (United Nations Climate Change, 2023). The 6th Intergovernmental Panel on Climate Change report (IPCC - The Intergovernmental Panel on Climate Change, 2023) finds that, on average, Agriculture,

Forestry and Other Land Use were responsible for 13 to 21% of global total anthropogenic GHG emissions between 2010 and 2019.

However, the report also states that the LULUCF sector offers significant near-term mitigation potential while providing food, wood and other renewable resources as well as biodiversity conservation. Improved and sustainable crop and livestock management, sustainable farming practices, and soil carbon sequestration in agriculture (including soil carbon management in croplands and grasslands, and agroforestry) are the most relevant tools for mitigation policies. In this context, the development of new data-driven, statistical, and econometric methodologies addressing the socio-economic and environmental challenges of agriculture and soil use are essential. We, therefore, invite methodological and applied contributions for a special issue on the topic of statistics, data science methods and econometrics for the analysis and modelling of agricultural, forestry, land use and land change data. Submission topics of interest include but are not limited to:

- Spatio-temporal statistics methods (e.g., geostatistics, spatial point processes, areal models, Bayesian spatial and spatio-temporal models, spatio-temporal prediction) to analyze agricultural data, land use and land cover changes, and forestry data
- Small Area Estimation and Model-Assisted Estimation models applied to agro-industry surveys, land use and cover, and forestry inventories
- Econometrics methods, with a particular interest in spatial and spatio-temporal econometrics, focusing on the impact assessment of agricultural-related policies and the economic analysis of the agricultural sector and human-induced land use
- Statistical machine learning models, especially those accounting for the spatial and temporal dimensions of agricultural, land use and forestry data
- Data-driven analyses of remote sensing and satellite data related to land use, land cover, and farming
- Data-driven analyses of policy actions devoted to land and forestry protection, mitigation of
- human-induced land consumption and climate change
- Data-driven analyses of structural characteristics of the agro-industry, with particular attention to
- macro trends and evolution of the industry (e.g., self-sustainability of farms in terms of energy production, waste management and techno-productive innovations)

*Guest Editors: Felicetta Carillo, Paolo Maranzano, Philipp Otto*

**Deadline for submissions: 25 March 2024**

The competition of the Section on Statistics and the Environment (ENVR) of the ASA is now closed and, as in past editions, JABES has invited the winners and those receiving an honorable mention to publish their winning papers with us. The winning authors are requested to participate in ENVR's JSM Topic Contributed Session during JSM 2024 in Portland.

The winners and honorable mentions are:

- Winners: (a) Fusing climate data products using a spatially varying autoencoder. Jacob Johnson; (b) Neural Likelihood Surfaces for Spatial Processes with Computationally Intensive or Intractable Likelihoods. Julia Walchessen.
- Honorable mentions: (a) From Point to Polygon: A Unified Framework for Modeling Spatial Dependence. Lucas Godoy; (b) Attribution of Seasonal Wildfire Risk to Changes in Climate: A Statistical Extremes Approach. Troy Wixon; (c) Optimizing Heat Alert Issuance for Public Health in the United States with Reinforcement Learning. Ellen Considine

*JABES* is committed to highlight the best contributions through a year and we have set an internal voting system amongst the AE to select the winning ones. Recall we already announced the 2022 best papers published in *JABES*:

- Winner: "Probabilistic Forecasts of Arctic Sea Ice Thickness," 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]

You will note that we have just recently announced the JABES Best Papers for 2023. 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. I 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. 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 Twitter: @JabesEditor.

**Jorge Mateu**
Editor-in-Chief

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# Tribute in honor of Peter Armitage

We recently learned of the passing of IBS Past President (1972-1973) Peter Armitage, of the British-Irish Region.

Peter Armitage CBE was Professor and Head of Medical Statistics Department at the London School of Hygiene & Tropical Medicine (LSHTM) from 1961 to 1976. He was a pioneer in combining original research in statistical methodology with collaborative medical research, and greatly enhanced the growth and value of the profession of medical statistics during his LSHTM years. In particular, he founded the Master's in Medical Statistics in 1968/9, a key training ground for future leaders in the field. His book *Statistical Methods in Medical Research* quickly became a standard reference with subsequent editions in 1994 and 2002.

Among Peter's early research innovations, of particular note is his multi-state model of carcinogenesis developed with Richard Doll in the 1950s, which provided a conceptual framework on the evolution over time of cancer risk. His work on sequential medical trials formed the basis for much subsequent methodology on statistical stopping guidelines. The Editors of *Statistics in Medicine* wrote: "Anyone who delves in earnest into medical statistics will almost invariably encounter some facet of the work of Peter Armitage." Peter received the Royal Statistical Society's Bronze, Silver and Gold medals during his career, which reflects the statistical community's high regard for his work over many decades.

Peter left LSHTM to become Professor of Applied Statistics (formerly Biomathematics) at Oxford University. His formal retirement was in 1990, but he continued to make many important contributions, notably his editorship with Ted Colton of the multi-volume: Encyclopedia of Biostatistics, with over 800 contributors and 1,200 articles, some authored by himself. He was also very active on the increasingly important area of Data Monitoring Committees for clinical trials, drawing on his experience in monitoring AIDS trials. The MRC Biostatistics Unit in Cambridge hold their annual Armitage lecture, inaugurated in 2003, as an appropriate recognition of his pivotal contributions to the field. Peter Armitage was President of three key professional bodies: The International Biometric Society (1972), the Royal Statistical Society (1982) and the International Society of Clinical Biostatistics (1990).

Less publicly recognised is the personal support that Peter gave throughout his career to many students and young academics. Professor Stuart Pocock at LSHTM said: "Peter was my career mentor in so many ways: a wonderful Master's lecturer (I still have his notes), a challenging PhD supervisor, wise counsellor on my U.S. move into cancer trials research and a guiding light into other international collaborations."

Peter Armitage was a kind, gracious, modest man of immense influence across our profession.

We extend our deepest sympathies to his family who have lost a very special father, father-in-law, grandfather and great-grandfather.

# Tribute in honor of Richard Tomassone

*Richard Tomassone at the International Conference on Mathematical Statistics in Szklarska Poreba, Poland, in August 2000.*

It is with sadness that we learned of the passing of Richard Tomassone on 23 December 2023, at the age of 86. Richard Tomassone, initially trained as a polytechnic engineer, was for many years a key figure in French and international biometrics. According to him, biometrics was not a new discipline but a rigorous and humble approach to addressing often complex multidisciplinary problems. He was a researcher in the Biometric department of the French National Institute of Research in Agronomy (INRA) from its creation in 1964 and contributed to the development in different French cities of the Biometrics department which he chaired from 1978 to 1984. At that time, according to him, "biometrics was a convenient term to cover everything involving a mathematical tool with strong doses of electronic calculation; the tool was mainly statistical, and electronic calculation was in its infancy"[1]. Unrestricted by any sectarian mindset, he assimilated a wide variety of statistical and mathematical methods, and he successfully mobilized young researchers whom he gradually brought together in this community with a broad range of skills. From the early days of computer processing at INRA, he was concerned with providing tools for the implementation of these methods, hence his interest in software (e.g., GENSTAT, StatITCF which he actively collaborated). With Jean-Marie Legay, they were, in the 1970s and for about 10 years, the leaders of the French Biometrics Society (SFB), one as president and the other as secretary-general. Richard Tomassone also served as the President of the International Biometric Society in 1990-1991 and became an Honorary Life Member.

In the 1980s, he became with Didier Dacunha-Castelle one of the initiators and teachers of a Master's program in Statistics and Probabilities, primarily focused on life sciences, in Paris-Sud University. This program trained numerous researchers from French research Institutes (INRA, INSERM, CNRS), and French and foreign higher education institutions. Richard Tomassone was also part of the group of researchers who, from the 1970s-80s, contributed to the development and international dissemination, especially in Italy, of "Statistisque à la française." He co-led, with Edwin Diday, the memorable series of Data Analysis and Informatics congresses where multiple generations came together.

Throughout his career, Richard Tomassone conducted scientific missions at numerous universities and higher education institutions in various countries. He authored numerous French books on statistics. He wrote the latest, Exploration de Données et Méthodes Statistiques: data analysis & data mining (avec R) with me (ed. Ellipses, 2014), and I mention it with great emotion. I was his last doctoral student. This book, written together more than fifteen years after obtaining my doctorate, was a period of rich exchanges, intellectual complicity, knowledge transmission, and laughter.

As a knowledge bearer—bridging disciplines, generations—and a fervent advocate for breaking down barriers—between institutions, countries, schools of thought—Richard Tomassone has left a lasting impact on all those who have crossed paths with him through his kindness, availability, and generosity.

**Lise Bellanger**
Associate Professor of Applied Statistics, Nantes Université UMR CNRS 6629 Laboratoire de Mathématiques Jean Leray, France

[1] Tomassone, R. (2012). Jean-Marie Legay, du bon usage de la biométrie. *Natures Sciences Sociétés*, 20, 466-468. https://doi.org/10.1051/nss/2013053

# Software Corner

## Some ideas for exploring missing data

Nicholas Tierney
Infectious Disease Ecology and Modelling group
Telethon Kids Institute, Perth, WA, Australia

```
library(tidyverse)
library(visdat)
library(naniar)
```

### Introduction

When you do data analysis, you come across missing data. Because I felt so frustrated by how hard it was to handle and wrangle missing data, I wanted to make it easier. In my endeavours I have written two R packages, visdat and naniar, for exploring missing data, and several papers on the topic.

The present goal is to share some ideas on exploring missing data, using naniar, and visdat. To that end, we will focus on four questions.

1. How do we start looking at missing data?
2. How do we explore missingness in variables?
3. How do we explore missingness relationships?
4. How do we explore imputed values?

We will explore questions 1 and 2 in this article. Questions 3 and 4 will be explored in the next issue.

But first, let's introduce ourselves to the data.

### The data

The data used for this paper is measurements of rodents in Kansas, from Hope (2023). The use of this data is inspired by Allison Horst's "Exploring missing values in naniar" shiny application. In this paper we use a different, larger set of the data. For information on the metadata of the paper see here. The data set provides various biometric length and weight measurements, for four species of rodents: the Eastern woodrat, Prairie vole, Western harvest mouse, and Deer mouse. Table 1 shows a snapshot of 6 selected rows of the data, which shows some of the missingness.

*Table 1: A subset of the rodents dataset, containing measurements of various rodents, including: total length - from tail to nose, tail length, hind foot length, ear length, and weight. Each row represents a measurement of a given species of roden at a particular date. There are missing values represented by 'NA'.*

| date | species | total length | tail ength | hind_foot _length | ear _length | weight | sex | age |
|---|---|---|---|---|---|---|---|---|
| 2016-07-21 | prairie vole | NA | 32 | 20 | NA | 30.0 | F | A |
| 2016-07-21 | deer mouse | NA | 62 | 19 | NA | 17.5 | F | A |
| 2016-07-21 | western harvest mouse | NA | NA | NA | NA | NA | N | NA |
| 2016-07-21 | western harvest mouse | NA | NA | NA | NA | NA | N | NA |
| 2016-07-21 | prairie vole | NA | NA | NA | NA | NA | N | NA |
| 2016-07-21 | prairie vole | NA | 26 | 18 | NA | 18.0 | M | Juv |

### How do we start looking at missing data?

To get an overview of the missing data, we can use the visdat package (Tierney 2017), which was inspired by the work in csv-fingerprint, and functions like missmap, from Amelia (Honaker, King, and Blackwell 2011). The key function for exploring missingness is `vis_miss()`, which visualises the missingness of a whole dataframe. Figure 1 gives an example where it displays the data as missing, or not missing, and provides information on the amount of missings in each column.

```
vis_miss(rodents)
```

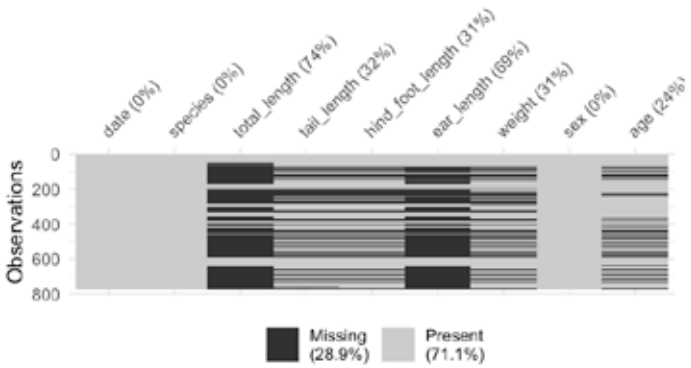


*Figure 1: An overview of missing data in the rodents dataset. The x axis shows the variables of the data, along with the amount of missingness in that variable, and the y axis shows the rows. Each cell represents the missingness of a datum. The overall missingness is given in a percentage below in the legend. We learn that there is nearly 29% missing data overall, the missing data occurs in total_length, tail_length, hind_foot_length, ear_length, weight, and age.*

We learn there is nearly 29% missing data overall, the missing data occurs in `total_length`, `tail_length`, `hind_foot_length`, `ear_length`, `weight`, and `age`, and mostly in `total_length` and `ear_length`.

### Exploring subgroups: Using facetting in visdat

To see this plot split up by species, we can split up the vis_miss plots into several facetted plots via the facet argument. For example, in Figure 2 we facet by the species variable. Visually, it appears that the missingness occurs in each species at roughly the same rate.

```
vis_miss(rodents, facet = species)
```

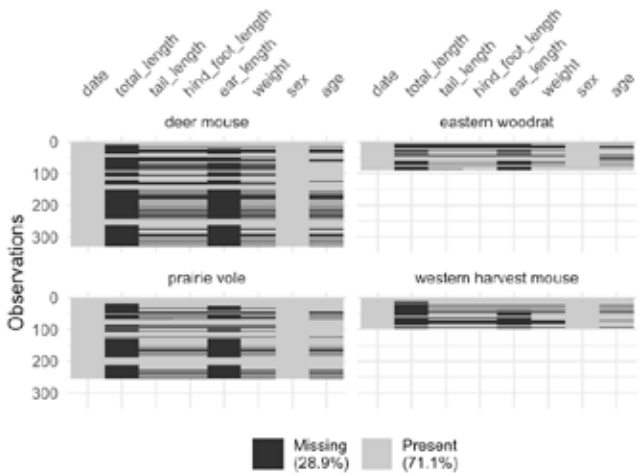


*Figure 2: An further overview of missing data in the rodents dataset. Similar to the previous graphic, we now present a facetted series of sub plots, one for each species. We learn from this that the missingness seems to be the same across each species*

There are other functions in the visdat package that focus on other types of data, for example, `vis_value()`, `vis_binary()`, and `vis_compare()`. To read more about the functions available in visdat see the vignette "Using visdat".

## How do we explore missingness in variables?

The visdat package provides overviews of data, whereas naniar provides a more comprehensive set of tools for missing data.

### Numerical summaries of missing values

Two convenient counters of complete values and missings are `n_miss()` and `n_complete()`. These work on both data frames and vectors, similar to `dplyr::n_distinct()`

```
dplyr::n_distinct(rodents)
[1] 617
dplyr::n_distinct(rodents$tail_length)
[1] 96
n_miss(rodents)
[1] 2013
n_miss(rodents$tail_length)
[1] 245
n_complete(rodents)
[1] 4944
n_complete(rodents$tail_length)
[1] 528
```

The functions `prop_miss_case()` and `pct_miss_case()` return numeric value describing the proportion or percent of missing values in the dataframe.

```
prop_miss_case(rodents)
[1] 0.7477361
pct_miss_case(rodents)
[1] 74.77361
```

Similar to `pct_miss_case()`, `prop_miss_case()`, `pct_miss_var()` and `prop_miss_var()` returns the percent and proportion of variables that contain a missing value.

```
prop_miss_var(rodents)
[1] 0.6666667
pct_miss_var(rodents)
[1] 66.66667
```

The syntax for the other numerical summaries in `naniar` are `miss_`, and then case, or var to refer to cases or variables. There are then summary, table suffixes. For example, the `miss_case_summary()` function returns a numeric value that describes the number of missings in a given case (aka row), the percent of missings in that row.

```
miss_case_summary(rodents) |> head()
# A tibble: 6 × 3
   case n_miss pct_miss
  <int>  <int>    <dbl>
1    63      6     66.7
2    74      6     66.7
3    77      6     66.7
4    78      6     66.7
5    79      6     66.7
6    91      6     66.7
```

The `miss_case_table()` function tabulates the number of missing values in a case / row. Below, this shows the number of missings in a case:

```
miss_case_table(rodents)
# A tibble: 7 × 3
  n_miss_in_case n_cases pct_cases
           <int>   <int>     <dbl>
1              0     195      25.2
2              1      48       6.21
3              2     277      35.8
4              3      10       1.29
5              4      14       1.81
6              5      49       6.34
7              6     180      23.3
```

We can interpret this output as follows:

- 195 cases with 0 missings, which comprises about 25% of the data,
- 48 cases with 1 missing, these make up 6% of the data,
- 277 cases with 2 missing, these make up 35% of the data,
- and so on.

`miss_var_summary()` returns the number of missing values in a variable, and the percent missing in that variable.

```
miss_var_summary(rodents)
```

```
# A tibble: 9 × 3
  variable          n_miss pct_miss
  <chr>              <int>    <dbl>
1 total_length         569     73.6
2 ear_length           530     68.6
3 tail_length          245     31.7
4 hind_foot_length     243     31.4
5 weight               237     30.7
6 age                  189     24.5
7 date                   0      0
8 species                0      0
9 sex                    0      0
```

Finally, the `miss_var_table()` function describes the number of missings in a variable:

```
miss_var_table(rodents)
```

```
# A tibble: 7 × 3
  n_miss_in_var n_vars pct_vars
          <int>  <int>    <dbl>
1             0      3     33.3
2           189      1     11.1
3           237      1     11.1
4           243      1     11.1
5           245      1     11.1
6           530      1     11.1
7           569      1     11.1
```

We can interpret this as there being:

- 3 variables with 0 missings, comprising 33% of variables in the dataset, and
- in the remaining variables similar patterns of missings, but not the exact same number of missing values.

## Visualise missingness in variables

To specifically focus on the number or proportion of missings in each variable, we can use `gg_miss_var()`, as seen in Figure 3.

```
gg_miss_var(rodents)
```


*Figure 3: Number of missing values for each variable. The x axis shows the number of missings, and the y axis shows each variable. We learn total length, and ear length have the most missing values, followed by tail length, hind foot length, weight, and age.*

This displays the number of missing values in each variable. We learn similar information to Figure 1: total length, and ear length have the most missing values, followed by tail length, hind foot length, weight, and age. Just like with vis_miss(), we can add in facets in these plots, via the facet argument, see Figure 4. We learn again, that the species have similar amounts of missing data in their variables. Sometimes it is useful to confirms the same piece of information!

```
gg_miss_var(rodents, facet = species, show_pct = TRUE)
```

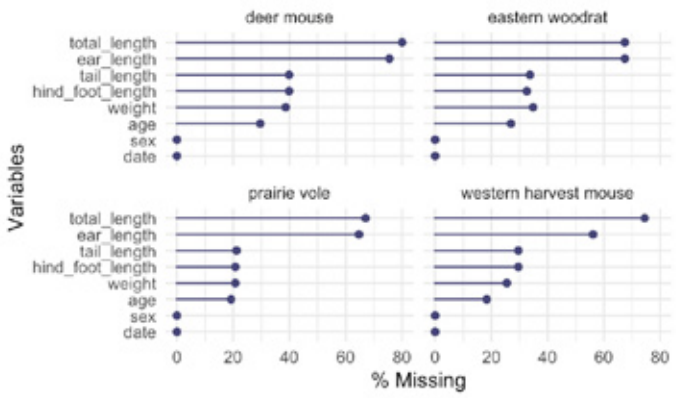


*Figure 4: Similar to the above plot but one subplot for each species. We learn that the missingness pattern is pretty similar for each species. We normalise using show_pct = TRUE as there are different numbers of observations in each species.*

It feels like there are several patterns with the missingness - some variables tend to go missing at the same time. To explore these patterns we can use `gg_miss_upset()`, which produces an "upset" plot of the intersecting sets of missingness (Conway, Lex, and Gehlenborg 2017). This can be thought of as a generalised way to visualise intersecting Venn diagrams.

```
gg_miss_upset(rodents)
```

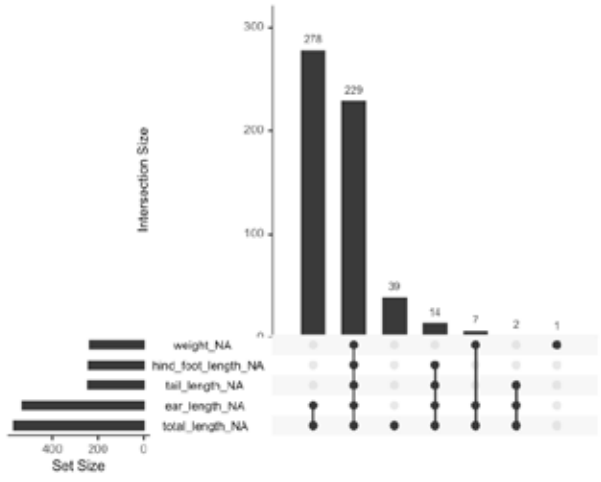


*Figure 5: An upset plot of 7 sets of missingness in the rodents data displaying a more nuanced depiction of the patterns of missingness in the data. The number of missings in each variable is seen on the bottom left bar plot. The bottom panel shows the different sets of co-occuring missingness. For example, the bottom left two dots show ear length and total length going missing together - corresponding to the bar plot above it, showing 278 missings. We learn that there are two dominant sets of missingness, where ear length and total length go missing, and then weight hind foot length, tail length, ear length and total length being missing.*

There are more visualisations available in naniar (each starting with gg_miss_) - you can see these in the "Gallery of Missing Data Visualisations" vignette. Most plots created with the gg_miss family all have a basic theme (except for gg_miss_upset()), but you can customise them by adding components like a standard ggplot object:

```
gg_miss_var(rodents) +
  theme_bw() +
  labs(y = "Number of missing observations")
```

It is also worth noting that for every visualisation of missing data in naniar, there is an accompanying function to extract the data used in the plot. This is important as the plot should not return a dataframe - but we want to make the data available for use by the user so it isn't locked into a plot.

For example, miss_var_summary() provides the dataframe that gg_miss_var() is based on.

```
miss_var_summary(rodents)
```

```
# A tibble: 9 × 3
  variable          n_miss pct_miss
  <chr>              <int>    <dbl>
1 total_length         569     73.6
2 ear_length           530     68.6
3 tail_length          245     31.7
4 hind_foot_length     243     31.4
5 weight               237     30.7
6 age                  189     24.5
7 date                   0      0
8 species                0      0
9 sex                    0      0
```

Which also works with group_by():

```
rodents %>%
  group_by(species) %>%
  miss_var_summary()
```

Similarly, there is a data_vis_miss() function in the visdat package, which returns the data in the format that this visualisation requires.

```
data_vis_miss(rodents)
```

The aim of these is to provide the data required to make these visualisations, so if people want to create their own more customised versions of vis_miss() or gg_miss_var() then they can do that.

## Conslusion

This article has explored how to generate summaries and visualisations to help understand the missingness in your data set with the visdat and naniar packages. In the next issue, we will extend this to exploring and visualising missingness in multivariate settings, including bivariate missingness plots, identifying clusters of missingness and visualising imputed data.

## References


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# STRengthening Analytical Thinking for Observational Studies (STRATOS): Update on 2020-2023 Research Activities of Topic Group 8: "Survival Analysis"

Abrahamowicz M (1), Andersen PK (2), Gorfine M (3), Therneau TM (4)

(1) Department of Epidemiology & Biostatistics, McGill University, Montreal, Canada
(2) Section of Biostatistics, University of Copenhagen, Denmark
(3) Department of Statistics and Operations Research, Tel Aviv University, Israel
(4) Department of Quantitative Health Sciences, Mayo Clinic, Rochester, Minnesota, USA

Topic Group 8 "Survival Analysis" (TG8) aims at developing a systematic approach to time-to-event analyses of longitudinal observational studies. Many of our activities focus on addressing complex analytical issues that require *combining expertise* concerning different aspects of survival analysis and/or a systematic, neutral and unbiased comparison of alternative statistical methods. This report presents a concise update on TG8 activities and accomplishments in 2020-2023, i.e. since the first TG8 report was published in *Biometric Bulletin* in 2019.

In the past four years, new experts in survival analysis have joined TG8, which currently involves 12 researchers from eight countries on three continents, including three co-chairs: Michal Abrahamowicz (Canada), Malka Gorfine (Israel) and Terry Therneau (USA); as well as nine members: Federico Ambrogi (Italy), Per Kragh Andersen (Denmark), Richard Cook (Canada), Maja Perme Pohar (Slovenia), Pierre Joly (France), Torben Martinussen (Denmark), Hein Putter (the Netherlands), Michael Schell (USA), and Jeremy Taylor (USA).

A major achievement for TG8 was the publishing of a comprehensive paper in Statistics in Medicine in 2021 [1]. This paper, jointly authored by all of the then nine members of the topic group, gives guidance to the use of intensity-based (i.e. hazard-based) models, for the analysis of time-to-event data from observational studies. In any general multi-state model, the transition intensities are the fundamental parameters in the sense that a specification of all intensities allows for a likelihood-based inference in the model as well as for simulations from the model. We argue that also for models for a single event, as studied in the paper, the intensity provides a natural, dynamic description of the process of event occurrence. Important features of intensity-based models include the ease with which both right-censoring and delayed entry may be accounted for, the close connection with the proper choice of a time origin for the analysis, and the natural incorporation of time-dependent covariates. Such models are useful in spite of the fact that specification of a single event intensity may not suffice for the purpose of estimating absolute

risks of event occurrence and that contrasts between intensities do not necessarily allow for a causal interpretation.

In the paper, a review of the Cox proportional hazards model (and some alternatives) is provided as well as checklists, both for the purpose of investigating covariates and censoring before fitting any model, and for subsequent evaluation of the fit of a model [1]. Much attention is paid to a discussion of problems with immortal time bias and the way in which time-dependent covariates may be used for mitigating its impact. The above-mentioned shortcomings when estimating absolute risks and when aiming at causal interpretations are discussed and, finally, three examples are worked through in detail, thus providing illustrations of the use of intensity-based models, their interpretation, and the application of the check lists. Data and R code for the examples are given as part of the Supplementary Materials and the reference list includes 68 papers, most of which explore more in-depth specific analytical issues frequently encountered in survival analysis and/or propose new methods to address them, thus providing inspiration for further reading.

More recently, some TG8 members started inter-group collaborations with selected other STRATOS TGs. These projects focus on complex analytical challenges that require combining expertise in different areas of statistical research, and possibly smoothing some differences between their respective research paradigms and approaches. Specifically, Terry Therneau, one of TG8 co-chairs, collaborated with the members of TG6, which focuses on predictive and diagnostic models, to propose a unified framework for the validation of prediction models built using time-to-event analyses of right-censored outcomes. This collaboration resulted in a recent publication in Annals of Internal Medicine [2]. The work started out with a large collection of work to summarize; publications in this area have been voluminous. The paper chose to focus on Cox model prediction since that forms the bulk of survival modeling in medical research. In summary, there are a small number of fundamental principles. Of primary importance is to first think through what successful validation would be, for a particular study, e.g., if our target is to use the results to manage a patient's care for the next two years, then one should focus on predictions over a 2-year window. As well, discrimination and calibration represent different targets, one of which may be more relevant to the question at hand. There is no 'gold standard' target. The second principle is that calibration must be based on predictions with a causal interpretation such as the probability of remaining alive at some chosen time or the mean time in state; the hazard ratio itself is not a valid target. The third principle is to recognize that the fundamental issue in validation of a survival model is that the validation data set will itself be censored, the valid methods for doing so all reprise approaches that have stood the test of time for primary analysis of censored outcomes.

In July 2022, most TG8 members met in-person at the 31th International Biometric Conference (IBC), in Riga, Latvia, and discussed the ideas for new TG8 projects, including the main objectives and general approaches to address the resulting new challenges. These discussions identified three 'internal' projects, each of which will involve several TG8 members, often with complementary expertise and/or slightly diverging views concerning specific analytical issues and/or preferred modeling strategies. The first project aims at developing guidance for multi-state modeling. This project will expand the approaches of the aforementioned TG8 guidance paper for classic single-endpoint survival analysis by Andersen et al [1] to more complex analyses involving transitions between different, consecutive or mutually exclusive states. In this ongoing project, we offer a comprehensive introduction to multistate models, focusing particularly on the general construction of the likelihood function. We subsequently delve into advanced methodologies tailored for multistate settings, including intermittent observations, pseudo values, and the frailty approach to accommodate within- or between-subject dependence. Additionally, we provide an updated list of pertinent R and Python packages.

The second project will focus on analytical challenges regarding the choice of the multivariable regression model in time-to-event analyses. Whereas the first TG8 guidance paper [1] has briefly outlined the alternatives to the immensely popular Cox proportional hazards model, the latter dominates real-world applications of survival analysis, especially in clinical and epidemiological research. The proposed project will aim at developing and validating objective empirical criteria for choosing between proportional hazards, additive hazards, accelerated failure time and hybrid models. Flexible modeling of the possibly non-linear effects of continuous predictors will be also explored, within each modeling framework. Diagnostic tools to identify violations of the underlying assumptions, and modeling strategies to account for such violations, and to represent time-varying and/or non-linear effects, will be also systematically evaluated. The initial phase will focus on time-fixed (baseline) covariates, but later we will attempt to tackle additional complexities raised by time-varying covariates. The third project will delve into the specific challenges and issues associated with employing machine learning methods for censored survival outcomes. This encompasses recent advancements in deep learning and random forest techniques tailored for survival data. While much of the current research in this burgeoning field focuses primarily on metrics such as ROC-AUC and specific loss functions, bias and calibration are frequently overlooked. Therefore, our objective is to conduct a comprehensive comparison and validation of existing machine learning methods.

Furthermore, we intend to initiate two interdisciplinary projects that will entail close collaborations with other STRATOS TGs. These projects will center on the multifaceted challenges increasingly encountered in complex longitudinal observational studies with repeated measurements of time-varying covariates (TVCs), such as risk/prognostic factors or exposures. One project will address specific challenges related to both measurement and modeling of TVCs, including (i) sparse, irregular measures over time, (ii) measurement errors, as well as possibly their (iii) non-linear effects and/or (iv) cumulative effects on the outcome. This will require combining TG8 expertise in survival analysis with expertise in: (i) Missing Data (TG1), (ii) Measurement Errors (TG4), (iii) Functional Forms (TG2) and (iv) Causal Inference (TG7). Another project will focus on the choice of causal estimands for time-to-event analyses involving time-varying exposures, and will combine expertise of TG8 with Causal Inference (TG7) and Prediction (TG6). The goal will be to develop estimands that could predict changes in both relative and absolute risks that will follow different dynamic interventions or treatment regimes.

In the past three years, TG8 members have also contributed to invited sessions and symposia organized by the STRATOS Initiative. Terry Therneau has presented invited talks at both: (i) Symposium on "Statistical challenges in observational research and guidance recommendations from the STRATOS initiative" at the virtual annual conference of the Society for Epidemiological Research (SER) in June 2021 (talk entitled "A multi-state model for dementia"), and (ii) invited session "Prediction with observational data: STRATOS perspective" at the 31th International Biometric Conference (IBC), in Riga, Latvia, in July 2022 (talk entitled "Assessing performance of survival predictions models"). Michal Abrahamowicz was a co-organizer of both the SER Symposium and IBC session, and gave, on behalf of TG8, a talk on "Selected challenges in multivariable time-to-event analyses" at the invited session "Various issues in multivariable model building" during the Royal Statistical Society (RSS) International Conference in

Manchester, UK, in September 2021. Malka Gorfine presented the talk "The STRATOS initiative - TG8 Report" that summarized recent TG8 accomplishments and activities, as well as plans for future projects, at the (virtual) general STRATOS conference in March 2023.

[1] Andersen PK, Perme MP, van Houwelingen HC, Cook RJ, Joly P, Martinussen T, Taylor JMG, Abrahamowicz M, Therneau TM, for the Topic Group 8 of the STRATOS initiative. Analysis of time-to-event for observational studies: Guidance to the use of intensity models. *Statistics in Medicine* 2021; 40(1):185-211. doi.org/10.1002/sim.8757.

[2] McLernon DJ, Giardello N, van Calster B, Wynants L, van Geloven N, van Schmeden M, Therneau TM, Steyerberg E, for Topic Groups 6 and 8 of the STRATOS initiative. Assessing performance and clinical usefulness in prediction models with survival outcomes: practical guidance for Cox proportional hazards models. *Annals of Internal Medicine* 2023: 176(1):105-114. doi.org/10.7326/M22-0844.

# Region News

## Argentinian Region (RArg)

### Argentine Region Academic Activities

Between 9-12 October 2023, the Argentine Group of Biostatistics (GAB), the Argentine Region of the IBS, held the XXVII Scientific Meeting of the GAB and the Biostatistics Teaching Conference. The events took place at the Faculty of Natural Sciences of the National University of Salta, with the collaboration of this institution. The Biostatistics Teaching Conference, the first specific event focused on the teaching of biostatistics held in the country, had the participation of 90 attendees, both in-person and virtually. The conferences and workshops were led by local and foreign specialists and focused on higher education teaching.

The GAB Annual Scientific Meeting featured renowned speakers from the Argentinean Region as well as from Chilean and Central America & Caribbean Regions. Specialists in areas such as agronomy, chemometrics, medicine, and the environment were also present. Additionally, courses and workshops on current topics of interest were offered during the event, and numerous works were presented in poster format. This event brought together researchers, educators, and students interested in the practical applications of statistics in biological sciences, including biologists, agronomists, computer scientists, chemists, veterinarians, and statisticians. It was an excellent opportunity to promote knowledge exchange among colleagues, receive constructive feedback, and facilitate professional networking.

### Young Biometricians Contest

During the XXVII Scientific Meeting of the GAB 2023, the "Susana Fillippini Young Biometricians Contest" took place. Preselected finalists, both undergraduate and graduate students, presented their analytical solutions for the same dataset, and the winners were determined by a five-member jury. The jury commended the participants for their participative attitude and their contribution to biometrics and announced the winners:

- **Undergraduate** Level: First place for Magdalena Damiani and Valentín Rozenblit with a score of 96/100, and Second place for Rubén Mendoza with 90/100.
- **Graduate Level**: First place for Juan Manuel Fiore and Martín Rodríguez Núñez with a score of 98/100.

This contest is held each year to promote the development of skills in statistical consulting among young students directly or indirectly involved in Biometrics.

**Silvia Suhring**
Biometric Bulletin Correspondent

## Australasian Region (AR)

### Conference

November 27 to December 1 finally saw a resumption of our biannual conference after a four-year hiatus. It was very good to see old friends and reunite with colleagues, especially our Australian colleagues. The conference was held in the Copthorne Hotel and Resort Bay of Islands, Waitangi, NZ—a venue which turned out to be very pleasant indeed. And, unusually so for New Zealand, the weather cooperated all week with only one bout of rain which happened whilst most were asleep. The conference was a joint event with the Statistical Ecology and Environment Monitoring conference which bought a few extra delegates. Keynote speakers were (in order of appearance): Hans-Pieter Piepho (U. Hohenheim, DE), Lisa Warbrick (Indigenous Genomics Institute, NZ), Adrian Baddeley (Curtin U., AU), David Warton (UNSW, AU), and Joanne Potts (The Analytical Edge, AU).

*Caption: IBS-AR conference delegates at the Waitangi Treaty Grounds*

### E. A. (Alf) Cornish Awards

The conference also allowed the resumption of the Cornish Awards which recognise members in the Australasian Region who have given 'long-time' service to the Biometric Society and for the advancement of biometry. The worthy recipients were Past President, Mario D'Antuono (Perth, WA), and IBS Council Representative Chris Triggs (Auckland, NZ).

### Annual General Meeting

The AGM saw a variety of issues discussed, the most important of these being the election of office holders and the selection of the next conference location. Alison Kelly (QLD) was nominated and elected as incoming president! With Alison's election, Vanessa Cave steps down

from the Past President/Outgoing President's role. However, Vanessa will remain a member of the Council as she still holds the roles of IBS Awards Committee Member and Safety Officer.

**Garth Tarr**
Biometric Bulletin Correspondent

## Brazilian Region (Rbras)

### 68th RBras Annual Meeting

The 68th RBras will be held 29-31 May 2024 in Piracicaba-SP, being organized by the Department of Exact Sciences at ESALQ/USP. Registration for participation and submission of works (oral communication or poster) is open. Check our website for more details: https://www.68rbras.com.br

### New RBras Website

The new RBras website was launched in November 2023, being built in an environment very familiar to the statistical community: in R Blogdown via Hugo Templates and handled 100% in R Language, via RStudio and VSCode, allowing the creation of a modern platform, responsive, intuitive to use and that meets RBras' current demands. The English version can be accessed at https://www.rbras.org.br/en

### Events Supported by RBras in 2023

Throughout 2023, RBras supported several local events in the area of statistics: IV Paraibano Statistics Meeting, XXX IME Week and VII IME/UFG Research and Postgraduate Seminar, 1 Workshop on Applied Statistics and Stochastic Processes, 4th R Day, and 1st SouthStat Meeting; and XVIII School of Regression Models.

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

## British and Irish Region (BIR)

### Upcoming Events of the British and Irish Region

The BIR Region is co-organiser of the "Response-Adaptive Randomisation in Clinical Trials Workshop" at the MRC Biostatistics Unit, Cambridge on the 29th of February. The workshop is aimed at the broad scientific community working on the development of methods for response-adaptive clinical trials and their use in practice. Keynote speakers include:

- Professor William Rosenberger – George Mason University
- Professor Chris Jennison – University of Bath
- Professor Kert Viele – Berry Consultants
- Professor Lorenzo Trippa – Harvard T.H. Chan School of Public Health
- Professor Peter Mueller – University of Texas
- Professor Monia Lupparelli (representing Alessandra Giovagnoli) – University of Florence
- Dr Sofía Villar – MRC Biostatistics Unit
- Dr. David Robertson – MRC Biostatistics Unit

Following the above workshop is a short course on Response-Adaptive Methods for Clinical Trials 28th of February at MRC Biostatistics Unit, East Forvie Building, Forvie Site, Robinson Way, Cambridge CB2 0SR. See Response-Adaptive Randomisation in Clinical Trials Workshop-MRC Biostatistics Unit (cam.ac.uk) for details. The Course Objectives include:

- Develop an understanding of the breadth of response-adaptive allocation designs available in the literature.
- Identify design and analysis considerations specific to response-adaptive designs, including how to target unequal allocation ratios.
- Explore and compare the performance of a range of response-adaptive designs via simulation in R.
- To identify key case studies of clinical trials that use response-adaptive methods in practice.

### Past Events of the British and Irish Region

2023 BIR AGM: The AGM of the British and Irish Region of the International Biometric Society took place on 12th of December 2023 at the Royal Statistical Society Headquarters, 12 Errol Street, London, EC1Y 8LX. Minutes of the meeting will be available on the BIR section of the IBS website soon.

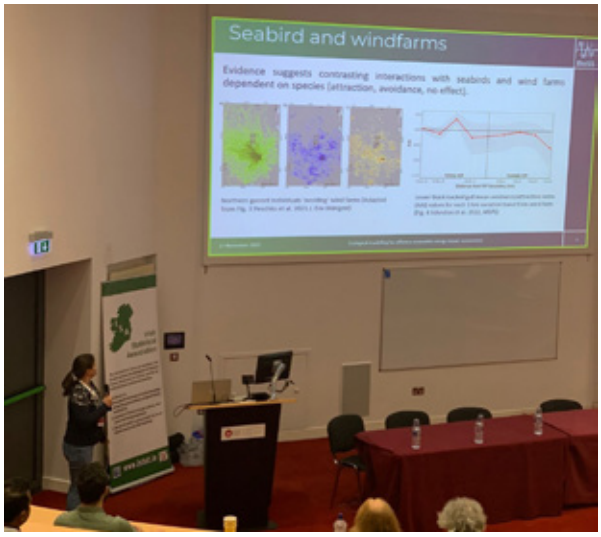
The BIR Region co-organised a session at the one-day conference of the Young Statisticians' Section of the Irish Statistical Association, which was held at the University of Galway on 17th November 2023. The 4th Young-ISA Meeting, held on 17th November 2023, in Galway, Ireland, brought together over 80 statistics and data science researchers. The 4th meeting of Young-ISA brought together career-young statisticians in Ireland to focus on Researchers' Toolkit: Publication, Progression, and People. The event featured engaging talks on statistical modelling, data visualization, and career development. A highlight was the Researchers' Toolkit session with three fantastic keynote talks:

- Kathleen O'Sullivan from University College Cork spoke on "People: You Are in the
- Middle Too"
- Brendan Murphy from University College Dublin presented "Navigating the
- publication system: Directions from an author, reviewer and editor"
- Carl Scarrott from the University of Galway discussed "Plan for Progression"

The invited speakers brought fantastic strategies and explained multiple topics of the academic career to the event attendees. During the event, there was a career panel discussion with the invited speakers and Shanthi Sethuraman, Vice President of Global Statistical Sciences and Advanced Analytics at Eli Lilly company. Attendees found the discussions on building strong professional networks and the selection process for statistical-related roles in Industry and academia to be of immense value.

A joint session between Young-ISA and the British and Irish Region (BIR) of the International Biometric Society featured insightful technical talks, such as "Ecological modelling for offshore renewable energy impact assessment;" and "Bayesian additive regression trees for genotype-by-environment interac-

tion models;" that were presented by Dr. Estevao Batista Do Prado from Lancaster University and Dr. Ana Silva Couto from Biomathematics and Statistics Scotland (BioSS), Edinburgh, UK. The joint event was a success and brought fantastic connections from the statistical research in the region. Overall, the 4th Young-ISA Meeting was a resounding success in fostering connections and collaboration among the next generation of statistical leaders, and it benefited from support and sponsorship of the British and Irish Region.




*Dr. Ana Silva Couto (BioSS) presenting their talk on "Bayesian additive regression trees for genotype-by-environment interaction" at the joint IBS BIR and Y-ISA meeting in Galway.*

A one-day BIR course in "Modelling continuous-time capture-recapture data" took place on the 5th December at the University of Edinburgh and was taught by Professor Paul Blackwell of the School of Mathematics and Statistics at the University of Sheffield. This was a one-day, in-person course that looked at the basic ideas underpinning likelihood-based statistical methods and models for continuous-time capture-recapture data. The emphasis of this course was on situations where 'recapture' observations can occur at any instant, so that the modelling of the process of the observation times themselves is a necessary part of the analysis. The IBS BIR would like to give a special thanks to Professor Paul Blackwell for running this course.

**Kirsty Hassall**
Biometric Bulletin Correspondent

## China Region (CHINA)

The 6th Pacific Causal Inference Conference


Causal inference has gained significant traction across diverse disciplines, encompassing statistics, biostatistics, biomedical science, computer science, economics, epidemiology, and various social sciences. In the light of this burgeoning interest, 2024 the 6th Pacific Causal Inference Conference (PCIC2024) is scheduled to take place in Shanghai, China, on 5-6 July 2024, marking a notable milestone in the field.

Commencing in 2019 under the leadership of Professor Xiao-Hua Zhou, PCIC has successfully organized five editions. The inaugural conference unfolded in Beijing on 11-12 May 2019, followed by subsequent editions in Beijing on 26-27 September 2020; 11-12 September 2021; 17-18 September 2022; and 16-17 September 2023. Notably, the upcoming sixth edition will break new ground by being hosted in Shanghai for the first time. Moreover, PCIC 2024 is scheduled to be held concurrently with the World Artificial Intelligence Conference (WAIC) in July 2024.

PCIC 2024 extends a warm invitation for both in-person and virtual attendance, acknowledging the evolving dynamics of global participation. The conference endeavors to serve as a dynamic platform for participants to disseminate their research findings, share insights, and exchange experiences related to causal inference. It also aims to foster collaboration and generate innovative solutions for the challenges and opportunities intrinsic to this dynamic field.

The conference program will encompass a diverse array of activities, including keynote speeches, invited talks, panel discussions, oral presentations, and poster sessions. In a significant development, PCIC 2024 will publish the independent conference proceedings for the first time. Accepted papers will be published in the PCIC 2024 proceedings, which will undergo submission for inclusion in prominent databases such as EI, Scopus, DBLP, and Google Scholar. In addition, accepted papers will have an option to be published in a special issue in *Biostatistics & Epidemiology*, the official journal of International Biometric Society-Chinese region. The selection of the papers will be made by the Scientific Committee of the Conference and will go through the peer-reviewed process at the journal. Your participation in PCIC 2024 is sincerely encouraged, offering an invaluable opportunity to explore a wide spectrum of topics within the realm of causal inference.

Tentative Conference Website

**Scientific Committee**

Chair: Xiao-Hua Zhou, Peking University

Members (Alphabetized by Last Name):

- Ruichu Cai, Guangdong University of Technology
- Peng Ding, University of California, Berkeley
- Fang Han, University of Washington
- Satoshi Hattoris, Osaka University
- Jinzhu Jia, Peking University
- Kajsa Kvist, Novo Nordisk
- Theis Lange, University of Copenhagen
- Fabrizia Mealli, European University Institute
- Wang Miao, Peking University
- Yumou Qiu, Peking University
- Manuel Gomez Rodriquez, Max Planck Institute for Software Systems
- Ricardo Silva, University College London
- Lan Wang, University of Miami
- Linbo Wang, University of Toronto
- Lu Wang, University of Michigan
- John Jiaosu Wu, Chinese Academy of Sciences
- Shu Yang, North Carolina State University
- Ting Ye, University of Washington
- Kun Zhang, Carnegie Mellon University & MBZUAI
- Riquan Zhang, Shanghai University of International Business and Economics

**Sponsors:**

- Beijing International Center for Mathematical Research, Peking University
- Department of Biostatistics, School of Public Health, Peking University
- School of Mathematical Science, Peking University
- Center for Statistical Science, Peking University
- International Biometric Society – Chinese Region
- Biomedicine Statistics Section of Chinese Society of Applied Statistics
- Mathematics in Medicine Section of Chinese Mathematical Society
- Chinese Academy of Sciences
- Shanghai University of International Business and Economics

**Dr. Xing Zhao**
Biometric Bulletin Correspondent

## Eastern Mediterranean Region (EMR)

This year, the International Biometric Society (IBS) is an international society for the advancement of biological science through the development of quantitative theories and the application, development, and dissemination of effective mathematical and statistical techniques.

As representatives of the Eastern Mediterranean, Italian and Spanish regions of IBS (EMR-IBS, SIB – Società Italiana di Biometria, SEB - The Spanish Biometric Society), we have decided to initiate a webinar series to increase cross-regional research interaction. The first event, which will take place on 29 February 2024 at 14:30 (CET/GMT+1) (15:30 GMT+2, 16:30 GMT+3), will be hosted by Xiao-Li Meng, Whipple V. N. Jones Professor of Statistics at Harvard University, on the topic "Personalized Treatments: Sounds heavenly, but where on Earth did they find my guinea pigs." The event will be moderated by Professor Emeritus Yoav Benjamini from Tel Aviv University.

All interested researchers and students, especially IBS members, are invited to the event. Please fill out the registration form for participation. A Zoom link will be sent to those who registered. Looking forward to your participation in the event.

**Necla Kochan**
Biometric Bulletin Correspondent


## Eastern North American Region (ENAR)

### ENAR Officers

ENAR is pleased to welcome the incoming President Renee' H. Moore, President-Elect Paul Albert, and incoming secretary Alisa J. Stephens-Shields, who will join the incoming president, Renee' Moore, past president Leslie McClure, and treasurer Qi Long. ENAR also excitedly congratulates newly elected Regional Committee (RECOM) members Veera Lorin Crawford, Rachel Nethery, and Loni Phillip Tabb. The entire ENAR membership expresses sincere appreciation to all candidates. We are truly fortunate to have many outstanding members willing to commit time and energy to serve the profession and organization. We thank our Past President (2023) Leslie McClure for chairing the Nominations Committee, and we are also grateful for the service of our continuing officers and RECOM and RAB members.

### 2024 ENAR Spring Meeting

The 2024 Spring Meeting of the IBS Eastern North American Region, themed "ENAR – A Home for Every Biostatistician," was held March 10-13, 2024, at Baltimore Mariott Waterfront, Baltimore, MD. Detailed information can be found on the ENAR Conference Website. The meeting brought together students, researchers, and practitioners from academia, industry, government, and beyond, connected through a common interest in Biometry. The academic and scientific programs offered a great platform to explore new fields, reinforce knowledge in statistical methods, applications, and software, and engage in discussions vital for career growth, mentorship, guidance, and supervision. Once again, the meeting was outstanding, presenting an impressive lineup of short courses, tutorials, and roundtable discussions.

The program committee put together a diverse invited scientific program. The invited sessions organized by ENAR covered a wide range of areas in biostatistics, with topics including statistical challenges with linked and coarsened data in public health research, microbiome and metabolomics analysis, using surrogate markers for analyses and study design, Bayesian methods for time-to-event data, single-cell RNA-seq data and spatial transcriptomics, clinical trial design for precision medicine, statistical methods for postmarket medical product safety, observational health data analysis, statistical innovations for real-world data, statistical methods for wearable computing, complex longitudinal data from observational studies, complex longitudinal data from observational studies, analysis of studies reliant on error-prone electronic health records data, Bayesian methods for complex biomedical data, cancer risk modeling in action, analysis of real-world patient outcomes data using electronic health records and claims data, novel methods and study designs for long COVID research, and adaptive methods for analyzing complex biomedical time series data, among others. The IMS invited sessions included modern statistical methods for spatial multiplex imaging data, the interface between generative AI and modern statistics, recent advances in statistical/computational approaches to single-cell multi-omics, precision health in imaging and genetics studies, innovative approaches for handling high-dimensionality in Bayesian analysis, recent advances in statistical and machine learning methods for electronic health record data, and advances in causality with applications to brain imaging, among others. Invited panels covered topics of perspectives from recruiters and hiring committees with focus on fostering inclusivity and diversity, data scientists and biostatisticians: competitors or collaborators, and aiming for representativeness without formal representativeness. A complete listing of the many invited sessions to be presented at the meeting can be found on the ENAR Conference Website.

The educational program assembled by the Educational Advisory Committee provided many opportunities for ongoing learning through a variety of short courses, tutorials, and roundtables. We are grateful to all the instructors and leaders willing to share their expertise with attendees. The program consisted of several full-day and half-day Short Courses, with topics covering Bayesian modeling of epidemics, techniques and tools for causal machine learning, difference in difference, model-assisted designs for adaptive clinical trials, and statistical computational methods for microbiome data analysis, among others. The Roundtable luncheons provide a more focused discussion with distinguished statisticians in an informal setting with a small number of attendees. They covered a variety of topics, both professional development and statistical, including advancing rare disease research, funding at the NIH: grants, summer programs, and special notices, statistical consulting and collaboration, inclusive leadership in the industry, current challenges in medical device regulation, and challenges in collecting and evaluating patient-reported outcomes. These provided an excellent opportunity to interact with some of the outstanding ENAR leaders! Special thanks to the members of the Educational Advisory Committee — for their guidance in an outstanding educational program.

The Presidential Invited Address lectures were delivered by Drs. Suan S. Ellenberg and Adrian Coles. Dr. Ellenberg is Professor Emerita of Biostatistics, Department of Biostatistics and Epidemiology with a secondary appointment in the Department of Medical Ethics and Health Policy, Perelman School of Medicine at the University of Pennsylvania. Her research has focused on practical problems and ethical issues in designing, conducting, and analyzing data from clinical trials, including surrogate endpoints, data monitoring committees, clinical trial designs, adverse event monitoring, vaccine safety, and special issues in cancer and AIDS trials. Her talk was titled "*Statisticians and the COVID-19 Pandemic*," and in her talk she discussed some of the challenges met by statisticians over the past few years during COVID, and what we learned from them. Dr. Coles is a Director of Biostatistics at Bristol Myers Squibb. In this role, he provides strategic thought leadership to interdisciplinary drug development teams and operational leadership to his biometrics team to support the design and execution of clinical trials and regulatory approval of new medicines in immunology. His talk was titled "*We Are All in the People Business: A Marine's Reflection on Leadership*," and explored several leadership lessons from his first career as a decorated United States Marine and the translation of these experiences into his journey as a clinical researcher. Please visit the ENAR Conference Website for more details on ENAR 2024 Presidential Invited Address lectures.

### 2024 JSM, Portland, OR

The 2024 Joint Statistical Meetings will be held in Portland, Oregon from 3-8 August 2024. The theme for the 2024 meeting is "Statistics and Data Science: Informing Policy and Countering Misinformation."

### ENAR Webinar Series

As part of ENAR's education initiative, ENAR webinar ("webENAR") promotes continuing education for professional and student statisticians by disseminating cutting-edge knowledge to our membership. Registration and details for ENAR webinars can be found at: https://www.enar.org/education/.

**Saptarshi Chakraborty**
Biometric Bulletin Correspondent

## French Region (RF)

It is with sadness that we learned of the passing of Richard Tomassone on 23 December 2023, at the age of 86. Richard Tomassone led the French Region of the IBS "Société Française de Biométrie (SFB)" for about 10 years in the 1970s. He also served as the President of the IBS in 1990-1991 and became an Honorary Life Member (See tribute on page 10.)

The board of the French Region of the IBS has been renewed after its annual general meeting held 27 November 2023: Cécile Proust-Lima now serves as the President of the society, Anne Thiébaut as the Treasurer and Pascale Tubert-Bitter remains as the Secretary. Cécile Proust-Lima and Anne Thiébaut are also Representative Council Members of the IBS. All members are grateful to David Causeur, Pascal Wild and Pascale Tubert-Bitter for serving formerly as President, Treasurer and Representative Council Member, respectively.

Coming events of the French Region of the IBS include:

- An invited session within JdS'24, the 55th annual meeting of the French Society of
- Statistics (SFdS), to be held May 27-31, 2024 in Bordeaux, France. Our 3 invited speakers are Marie-Pierre Etienne (AgroCampus Rennes), Sabine Hoffmann (Ludwig-Maximilians Univ., Munich) and Hélène Jacqmin-Gadda (Inserm Bordeaux)
- 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 SFdS and the French Region of the IBS, to be held in autumn 2024
- The awarding of the biennial Daniel Schwartz dissertation prize during the Young Researcher Day, to be held at the beginning of 2025 in Bordeaux, France

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

**Anne Thiebaut**
Biometric Bulletin Correspondent

## German Region (DR)

### Causal Machine Learning

The 11th autumn workshop by the cooperating working groups of DGEpi (German Society for Epidemiology), GMDS (German Association for Medical Informatics, Biometry and Epidemiology), IBS-DR (German Region of the International Biometric Society) and DGSMP (German Society for Social Medicine and Prevention) was held in Mainz, 9-10 November 2023. The introduction to causal inference was a lecture by Uwe Siebert. Among the 10 talks there were the two keynotes: Noemi Kreif: What is the place of machine learning in causal inference? and Nick Latimer: Using causal inference for the design and analysis of clinical trials and disease registries. About 40 and 10 colleagues participated in person and online, respectively. The fruitful discussions continued in a local wine tasting house at night.

### Summer schools 2024

The German Region and the Austro-Swiss Region join forces for two English language summer Schools. "Genetic Epidemiology" is the title of the summer school in Davos (Switzerland) 13-15 June 2024 taught by Raphael Betschart, Cristian Riccio, Felix Thalén, Hugo Solleder, and Andreas Ziegler.

"Time-to-Event-Analysis" is the title of the summer school in Strobl (Austria) June 26-29 2024 taught by Paul Blanche, Sarah Friedrich, Kaspar Rufibach, and Helga Wagner.

### Upcoming Meetings

### 17 April 2024, 1 to 2 p.m online

"A world of differences - designed experiments and meta-analysis in the agricultural sciences"; by Hans-Peter Piepho

**24-26 April 2024 in Freising**

"BART – Bayesian Additive Regression Trees." English language workshop of the IBS-DR working groups Ecology and Environment, Bayes Methods, Spatial Statistics as well as the DFFA working group Biometry with a Tutorial by Jeremy Yoder and Colin Carlson.

**6-7 June 2024 in Dresden**

English language workshop of groups "Mathematical Models in Medicine and Biology and Statistical Methods in Bioinformatics" with keynotes by Anne-Christin Hauschild, Kathrin Thedieck, Carsten Marr

**28-31 July 2024 in Günzburg's Reisensburg**

"Statistical Computing". IBS-DR working group Statistical Computing and GfKl working group Classification and Data Analysis. Confirmed invited speakers: Achim Tresch (Köln) - Feature extraction for multivariate spatial data. Eyke Hüllermeier (München) - Uncertainty Quantification in Machine Learning: From Aleatoric to Epistemic. Sarah Friedrich (Augsburg) - Regularization methods in clinical biostatistics: State-of-the art and possibilities for improvement

**25-27 September 2024 in Wiesbaden**

Non-Clinical Statistics Conference 2024

**24 November 2024, in Darmstadt**

Workshop of the working group Pharmaceutical Research.

**Obituary to Theo Gasser**

We recently received the sad news that Theo Gasser, Professor Emeritus of Biostatistics at the Institute of Social and Preventive Medicine at the University of Zurich and founding head of the Department of Biostatistics at the Central Institute (ZI) of Mental Health in Mannheim, passed away on 1 October at the age of 82.

Theo Gasser was appointed to the University of Heidelberg in 1976 as a newly habilitated private lecturer and entrusted with the management of a newly established Department of Biostatistics at the ZI Mannheim, which had been founded a year earlier. Even then, he enjoyed an excellent reputation - also on an international scale - as an expert in statistical methods for analyzing longitudinal and curve data. The focus of his methodological research, which he consistently pursued in Mannheim alongside his routine duties, was on nonparametric methods based on kernel estimators, which are also widely used meanwhile in certain areas of artificial intelligence. His working group, which also included a sub-project in the Heidelberg Collaborative Research Center «Stochastic Mathematical Models», produced numerous publications in high-ranking journals that are still widely cited today, and several of his former colleagues were appointed to chairs in statistics in Germany and abroad. The kernel estimator, named after Theo Gasser and H.-G. Müller, is a benchmark for curve estimation that also became popular due to its effective implementations in R. It enabled the identification of a growth spurt before puberty, which characterizes growth in adolescence. There were many medical and especially psychiatric applications for the methods

developed and further refined by Theo Gasser and his colleagues, including in the field of EEG data analysis. His most frequently cited publication, among others in collaboration with his former colleague and friend Joachim Möcks, concerns the investigation of an optimal transformation for the normalization of EEG data. Theo Gasser left the ZI in 1991 after almost exactly 15 years of successful work because he received a professorship in Zurich and thus had the opportunity to return to his home university.

At the University of Zurich, Theo Gasser established biostatistics as an independent discipline, which was a first in Switzerland. He extended his research on nonparametric estimation of curves to areas such as multidimensional functions and sampling of curves, developed the culture of applying modern statistical methods to biomedical data, created a strong service of statistical consultations for members of the medical faculty, and promoted interdisciplinary research. He had a long and fruitful collaboration with Remo Largo, supported for years by the Swiss National Science Foundation, to analyze the extensive data of the famous Zurich longitudinal studies. In 2001, he was recognized for his work as a Highly Cited Researcher in the field of mathematics. On the occasion of his 60th birthday, a major symposium was organized in his honour in Zurich. Theo Gasser retired in 2006. His death leaves a great void for all those whom he generously inspired. We were comforted to learn that he was able to enjoy the time after his retirement with his family, and that he was able to discover exciting activities and new pleasures alongside those of science. A science that he served faithfully throughout his career. A science that has been enriched by Theo Gasser.

V. Rousson (Lausanne), B. Seifert (Zurich), S. Wellek (Mannheim)

**Reinhard Vonthein**
Biometric Bulletin Correspondent

## Japan Region (JR)

**The 2023 Biometric Seminar**

The Biometric Seminar entitled "Bayesian Inference with applications to clinical research" was held on 14-15 December 2023 both on-site at Chuo University and on-line. The lectures covered a wide range of topics including the basics of Bayesian inference, Markov chain Monte Carlo method, robust Bayesian inference, hierarchical Bayesian model with some applications, Bayesian clinical trial designs, and the design and analysis of clinical trials with hybrid controls. Especially, Dr. Margaret Gamalo gave two outstanding lectures, entitled "Extrapolation and complex innovative designs" and "Current developments in the use of external controls: estimation of effects of therapeutic interventions."

**The 2023 Biometric Lecture**

The first lecture, which was co-organized by Research Center for Medical and Health Data Science, the Institute of Statistical Mathematics, was held on the afternoon of 31 July 2023, where Dr. Christina Yap (The Institute of Cancer Research, United Kingdom) provided a great lecture, entitled "New SPIRIT and CONSORT extensions for early phase dose-finding clinical trials." The second lecture, which was co-hosted by Division of Biomedical Statistics, Department of Integrated Medicine, Graduate School of Medicine, Osaka University, was held on the afternoon of 11 October, where Dr. Tim Friede (University Medical Center Göttingen) had an excellent lecture, entitled "Bayesian evidence synthesis with

applications to combining randomized controlled trials and real world data."

### 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 at the Centennial Hall Kyushu University School of Medicine, Fukuoka, Japan. An invited session and a tutorial session will be organized.

Biometric Bulletin Correspondent

## Netherlands Region (ANed)

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

In this issue we are thrilled to look back on a successful PhD Day, which was hosted on Wednesday

29 November in the Danone office in Utrecht. The event brought together 40 enthusiastic PhD students and four invited speakers: Egbert Biesheuvel from Viatris, Maarten Schipper from RIVM, Laura Rodwell from the College ter Beoordeling van Geneesmiddelen, and Floor Van Oudenhoven from Danone Nutricia Research. All speakers shared valuable insights and experiences, providing attendees with a broad perspective on career prospects after their post-doctoral studies in Biostatistics.

Further, as part of our ongoing series of online seminars in Biostatistics we are honoured that Ernst Wit from the Università della Svizzera italiana, Lugano, Switzerland presented the first for this year on Thursday 1 February 2024. Ernst's talk was about: "Some inference tricks in event history analysis." Presentation slides are available online. The seminars aim at a broad biostatistical audience, in particular PhD students. Similar to the previous online sessions this seminar was attended by many PhD Students, but also more senior statisticians. The next online seminar will be announced soon.

News from our members: On 23rd December, Hendriek Boshuizen retired as endowed Professor in Statistical Modelling for Nutritional Research. In honor of this occasion, a symposium is organized on Friday 23rd of February, 13:00-16:15, followed by a reception until 18:30 in OMNIA, Hoge Steeg 2, 6708 PH Wageningen.

Finally, our next BMS-ANed activity will be organized on Thursday 20 June 2024 in Rotterdam 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 theme of this half-day event is "Statistical and Machine Learning Methods for Sequential Decision Making." The General Members Assembly will precede the meeting. Details on the invited speakers and exact location will appear soon on the BMS-ANed Meeting Website.

Photos and Captions:

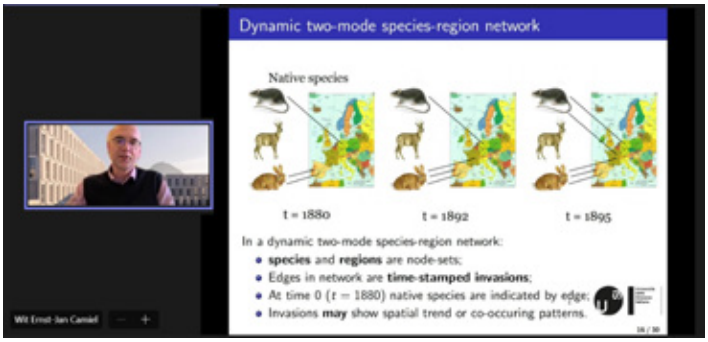

*Speaker of PhD Day*


*Speaker of PhD Day*

*Speaker of PhD Day*


*Speaker of PhD Day*

*PhD Day participants*




*Screenshot from Ernst Wit's online Biostatistics seminar*

**Roula Tsonaka**
Biometric Bulletin Correspondent

## Polish Region (GPol)

### LII International Biometrical Colloquium

The 52nd International Biometrical Colloquium was on 10-13 September 2023 in Szamotuły, near Poznań. The Polish Biometric Society organized the conference with the Department of Applied Mathematics and Computer Science of the University of Life Sciences in Lublin.

The event was in the hybrid mode (in-person and online). Thirty-seven biometricians from Poland, the Czech Republic, Slovakia, Portugal, Germany, and Estonia attended the conference in person. There were eight plenary sessions with 19 oral presentations and 11 invited speeches. One special lecture was devoted to the memory of Professor Rao. Besides, two workshops, addressed to PhD students, on data manipulation and visualization were held, with more than twenty (online and onsite) attendees for each.

During the conference, the scientific council of the Polish Biometric Society and a meeting of the Polish group of the International Biometric Society took place, where we discussed the plans for the Polish Biometric Society's development and the organization of the next conference. In addition, participants of the CEN2023 conference in Basel had the opportunity to share their impressions. The sightseeing trip in Szamotuły and a gala dinner were nice breaks in scientific activities. We have had a virtuous occasion for scientific discussions and interpersonal relations.

Let me express our great thanks to the organizing committee for plenty of work and effort taken to make our participation in the conference fruitful and successful.

*Attendees of the LII International Biometrical Colloquium*

**Elżbieta Kubera**
Biometric Bulletin Correspondent

## Western North American Region (WNAR)

### 2024 WNAR Election Results

Thank you to everyone who participated in the WNAR election for 2024 positions. Congratulations to WNAR President-Elect David Rocke, Program Coordinator Wen Zhou, and Regional Committee Representatives Marie Auger-Méthé and Lindsay Renfro. Special thanks go out to outgoing WNAR Past-President Gary Chan and outgoing Regional Committee Representatives Charlotte Gard and Julia Palacios for their efforts and dedication to WNAR.

We would like to thank all the WNAR members who volunteered to be candidates for these offices. WNAR is fortunate to have so many talented members willing to dedicate their time and energy to WNAR, which makes each election a choice among outstanding individuals.

### 2024 WNAR/IMS meeting

The 2024 WNAR/IMS meeting WNAR/IMS meeting will be in Fort Collins, Colorado from 9-12

June 2024. The conference will be joint with the 2024 Graybill Conference, to be held at Colorado State University. Fort Collins is 65 miles (105 km) north of Denver, approximately 2 hours from major ski resorts and 45 minutes from the Rocky Mountain National Park. The city has a thriving arts scene and an extensive mix of outdoor recreation activities. Scientific program co-chairs: Prince Allotey (UW) and Catherine Lee (Kaiser Permanente), email: wnarprogramchair@gmail.com IMS program chair: Jie Peng (UC Davis) Local organizer and Graybill Organizer: Wen Zhou (Colorado State) Chair of Student Award Committee: Kayleigh Keller (Colorado State) Registration for the meeting will open in February 2024. Please submit your abstracts and join us for invited and contributed sessions and panels, student paper presentations, as well as professional development opportunities. The WNAR website will have the most up-to-date status of the meeting.

### 2024 WNAR Student Paper Competition

WNAR sponsors students who enter the student paper competition. All WNAR-region entrants receive their registration fees and banquet dinner ticket for free. Monetary prizes will be awarded to the best papers in written and oral competitions. Information on the 2024 WNAR Student Paper Competition, registration information, and program details for the meeting will be posted as they become available on the WNAR website. We look forward to seeing you there.

### WNAR Indigenous Student Travel Award

In 2024 WNAR will begin offering a travel supplement for an Indigenous student from within the WNAR region to attend our annual conference. Eligible students include Indigenous peoples of North America and the Pacific Islands. To apply, please send a letter outlining your connection to Indigenous peoples and why you are looking forward to attending the WNAR annual conference, to: wnar@wnar.org. Please encourage your students to apply.

### IBS/WNAR Outstanding Impact Award and Lectureship

Nominations for the annual IBS/WNAR Outstanding Impact Award and Lectureship were due in late 2023, but please start thinking about nominating for the 2025 award submission. 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 impact to biosciences and environmental sciences. More information about the award process can be found on the WNAR award website.

**Jessica Minnie**
Biometric Bulletin Correspondent

# Announcements & Upcoming Events

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

**The 2024 Joint Statistical Meeting**
**3-8 August 2024**
Portland, Oregon
Canada

**The 68th Brazilian Region of IBS**
**29-31 May 2024**
Department of Exact Sciences of the Luiz de Queiroz College of Agriculture (ESALQ), University of São Paulo (USP)
Piracicaba, Brazil

**2024 WNAR/IMS Meeting**
2024 WNAR/IMS Meeting
**9-12 June 2024**
Fort Collins, Colorado
USA

**32nd International Biometric Conference**
**8-13 December 2024**
Atlanta, Georgia
USA

**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

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