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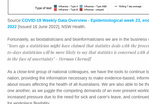
Statistical Society of Australia

SSA Biostatistics & Bioinformatics Newsletter

Q2 2022

Welcome to the SSA Biostatistics and Bioinformatics Newsletter for Q2 2022

As we prepare to enter the second half of 2022, we face great uncertainty. Against the backdrop of continued global financial and political unrest, locally we are each wrestling with the return to our own version of 'normal' following the height of the pandemic. Regardless of whether you find yourself back in the office, or continue to work on a downsized Zoom head, our world is not at it was. While COVID-19 numbers in Australia are currently decreasing, influenza notifications are rising (unprecedentedly early and early, as demonstrated for example, in the most recent NSW weekly surveillance report.



Source: **COVID-19 Weekly Data Overview - Epidemiological week 23, ending 11 June 2022** [issued 16 June 2022], NSW Health.

Fortunately, as biostatisticians and bioinformaticians we are in the business of uncertainty. *"Turn up a statistical wight have claimed that statistics deals with the prevention of data. In days statisticians will be more likely to say that statistics is concerned with decision making in the face of uncertainty". - Herman Chernoff*

As a close-knit group of national colleagues, we have the tools to continue to guide our nation, providing the information necessary to make evidence-based, informed, decisions about issues affecting the health of all Australians. We are also able to be there to support one another, as we juggle the competing demands of an ever-present workload, increased pressure due to the need for sick and carer's leave, and continued requirements for workplace flexibility.

In the spirit of connection, I am very pleased to welcome you to this second SSA Biostatistics and Bioinformatics (BnB) section newsletter for 2022. There are a number of exciting SSA events on the horizon. Our BnB section lunchtime webinars have been a huge success this year. Register for our upcoming webinar by Professor Jean Yang on June 29 at 12 pm. See below for more details! Also save the date for future webinars on September 28th and December 14th.

Stay in touch with us by subscribing to our Twitter and Facebook pages, and feel free to contact us with any ideas for events, activities or resources that would meet the needs of our >500 member BnB community.

Happy study designing, analysing, and communicating. *And when in doubt, remember, "uncertainty is an uncomfortable position, but certainty is an absurd one". - Voltaire*

KAM on behalf of the BnB Section

Upcoming BnB Section Lunchtime Webinar

Cross-Platform Omics Prediction Procedure: a game changer for implementing precision medicine

Professor Jean Yang, University of Sydney
June 29, 12pm (Melbourne time)

To register, click **here**

In this modern era of precision medicine, molecular signatures identified by advanced omics technologies are increasingly being translated into clinical practice. However, current approaches are often location-specific due to the inherent differences between platforms and across multiple centres, thus limiting the transferability of molecular signatures. I willpresent Cross-Platform Omics Prediction (CPOP), a penalised regression model that can use omics data to predict patient outcomes in a platform-independent manner and across time and experiments. CPOP improves on the traditional prediction framework of using gene-based features by selecting rate-based features with similar estimated effect sizes. These components gave CPOP the ability to have stable performance across datasets of similar biology, minimising the effect of technical noise often generated by omics platforms. We also present a comprehensive evaluation to demonstrate its potential to be used as a critical part of a clinical screening framework for precision medicine.

Careers Corner

Research Fellow in Biostatistics
Flinders University, Adelaide or Sydney
Closing Date: 22 June 2022 **closing soon!**

Biostatistician - Mental Health Australia General Clinical Trial Network
Swinburne University of Technology, Melbourne
Closing Date: 30 June 2022

Head of Biostatistics/Analytics
Burnet Institute, Melbourne
Closing Date: 29 June 2022

Statistical Consultant and Biostatistician (2 roles)
Stats Central, UNSW Sydney
Closing Date: 3 July 2022

Bioinformatician
Children's Cancer Institute Australia, Sydney

Senior Bioinformatics Research Officer
Children's Cancer Institute Australia, Sydney

Bioinformatics Research Officer
QIMR Berghofer, Brisbane
Closing Date: 28 June 2022

Bioinformatician
QIMR Berghofer, Brisbane
Closing Date: 27 June 2022

Upcoming SSA Events

SSA Vic Mentoring Night
Date: 21 Jun 2022, 6:00 PM - 8:00 PM (AEST)

Location: The Clyde Hotel

Registration: Non-SSA members - $25.00, SSA Members - $5.00

Hi Victorians! SSA Vic invites you to come join us at The Clyde Hotel to talk about careers in statistics and data science with experienced statisticians and data professionals! We will including finger food to bring your questions and your networking spirit with you! Due to limited space, we can only accommodate a maximum of 40 attendees so reserve your spot early!

MACH EMCR Research Design Webinar Series: **Economic evaluation alongside clinical trials: principles of study design and decision analysis**

Date: 22 Jun 2022, 12:30 PM - 1:30 PM (AEST)
Location: Online
Presenter: Dr An Duy Tran

MACH (Melbourne Academic Centre for Health) is pleased to present a four-part webinar series exploring research design tailored specifically for early and mid-career researchers. The series will be conducted by experts from the University of Melbourne's Methods and Implementation Support for Clinical and Health research Hub (MISCH) team from February-June 2022.

CANBERRA BRANCH MEETING: **CURRENT STATE AND PROSPECTS OF R-PACKAGES FOR THE DESIGN OF EXPERIMENTS BY EMI TANAKA**

Date: 29 Jun 2022, 5:45 PM - 7:00 PM (AEST)
Location: Hybrid format

SSA Canberra invites you to its (second) June branch meeting, featuring a talk by Emi Tanaka on the current state and prospects of R-packages for the design of experiments!

This is a hybrid meeting, occurring in-person at Allan Barton Forum, The Australian National University, and will be streamed online via Zoom.

Meet our mailing list
An Interview with Professor Marijka Batterham

Where do you currently work? I'm the director of NHMRC the National Institute for Applied Statistics Research Australia, and the Statistical Consulting Centre, at the University of Wollongong (UoW). Excitingly, I'm leading the UoW Data and Decision Science Initiative which is designed to promote data science internally with our staff and students, and externally with our community partners. We're looking at really upskilling our research staff and HDR students in data science skills, with particular focus on the health disciplines. We're developing better programming skills, converting most of our service subjects over to R; I would describe it as implementing a generational shift away from point-and-click software.

What were your background studies and how did you join the biostatistics field? My initial undergraduate degree was a Bachelor of Science majoring in molecular biology and biochemistry. I then did a Master of Nutrition and Dietetics and trained as a dietitian. I am still an Advanced Accredited Practicing Dietitian, and a lot of my research is in that area. After that I did a PhD in medicine, which was in nutrition in HIV. I was doing mainly randomised controlled trials and there was no one to help me with the stats and so that's when I became involved with biostatistics because I had to do my own stats for my studies, and I just loved it. So, I did my Master of Medical Statistics part-time while I was doing my postdoc. Then I spent the last 22 years doing statistical consulting. So, a diverse background. I think it helps with consulting if you have a domain expertise as well. It's not necessary, but it certainly helps if you understand all the jargon and medical terminology.

Why did you choose to work in your current field? I feel really strongly about advocating for data literacy so that's why I decided to stay in the consulting arena because I'm interested in spreading the word about the importance of data literacy and being able to understand statistical research. The people that we work with, if they wait provide consulting services for, need to be able to understand the evidence. How can they work as clinicians, how can they understand whether a diet works or not, or a drug works or not, if they can't understand the study on which the evidence is based?

What do you think is the most important concept or idea in biostatistics right now? Reproducible research and software innovations that help to facilitate reproducible research. R Studio in particular continues to get easier to use, and other software has developed markdown capabilities. Even SPSS version 28 has an output capacity that directly incorporates the syntax ready to rerun into the output. So, I think those changes in software are making it so much easier to teach reproducible research, especially to non-stats disciplines.

What do you think is the most important challenge for the future of biostatistics? I think it still gets back to a garbage in garbage out, back to the quality of the data. A lot of the work we do in consulting involves trying to clean up data that's been collected everybody. But I still think one of the biggest challenges is an understanding of the initial quality of the data as we move away from, say, traditional randomized control trials and more into getting data from wherever it's available. I think that understanding the limitations of that is really big challenge.

If you didn't pursue this field, what would have been your alternative career? I probably would have stayed in nutrition and dietetics teaching, because I still think that the limitations of evidence-based research are something that's not understood well in a lot of disciplines.

Want to be featured in the next member profile?

We are always in need of more member profiles. Its a great way to get some exposure to our >500 members. If interested, please let **Alberto Nettel-Aguirre** or **Nicola Armstrong** know.

Podcasts & Blogs

Women in Statistics and Data Science
Organised by the American Statistical Association Committee on Women in Statistics, WISDS is a podcast series where we celebrate and identify as women in the field of statistics. The account features a weekly guest curator sharing their perspective on a range of topics, from their own technical expertise to career perspectives and mentoring. Join the conversation by following @WomensStat

Casual Inference
In this regular **podcast** sponsored by the American Journal of Epidemiology, Dr Lucy D'Agostino McGowan and Dr Ellen Hess Hudgens discuss causal inference and its intersection with epidemiology, statistics and data science. Keep up to date about new episodes by following them on Twitter @casualefor

Prognosis Research
Developed by Professor Richard Riley and Dr Kym Snell (Keele University), this **website** aims to improve practices in prediction modelling aimed at applications in healthcare. Learn more about this fast-growing area of biostatistics by accessing the site's comprehensive resources including videos, research articles and details of upcoming training courses.

Do you have a favourite statistical podcast or blog?

If you would like to help us provide a brief summary of your favourite statistical podcast or blog to feature on our mailing list, please contact: **Kylie-Ann Mallitt** with the details.

Featured articles

Beyond Calculations: A Course in Statistical Thinking
E. Ashley Steel, Martin Lermann & Peter Guttorp (2019) Beyond Calculations: A Course in Statistical Thinking, The American Statistician, 73:sup1, 392-403

In this paper the authors hone in the importance of statistical thinking as a whole more than, as sometimes seen by many who use and or teach statistics, a set of algorithms yielding products.
I believe that the overall idea of statistical thinking in general is of crucial importance to avoid eroding the actual conclusions and uses of the tools of our profession, and starting such 'indoctrination' early, at the stage of teaching is the basis for instilling thinking statistically.

Recent publication that you'd like to share?

We love learning about all things related to biostatistics and bioinformatics. If you have a recent publication (your own or other) that you'd like to have featured in our newsletter, please contact **Nicola Armstrong** with the details.

Closing comments

Our Section is interested in biostatistics and bioinformatics and we are committed to assisting you with your career in these fields. We are interested in hearing from you, our members, about upcoming ideas for events, presentations, and/or workshops. We hope you enjoyed reading about upcoming events.

We hope all our members stay safe as well through the rest of 2022.

If your colleagues would like to receive this newsletter, they can sign up via **mailchimp**

To view previous newsletters please see our **section's webpage**.

Social media

We encourage all our members to follow our activities on our social media account links below. We actively promote upcoming events, job opportunities and relevant material. Our online community is growing on Facebook and Twitter! If you have any material you would like us to promote on our social media outlets or share with fellow members, please let **Kylie-Ann Mallitt** and **Nicole White** know.

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