

Australasian Region

IBS-AR

Newsletter



Issue 28
November 2021

President's Corner



Had this been a *normal* year, we would be gearing up for our biennial conference in the beautiful Bay of Islands. Sadly, we don't have the opportunity to meet in person this year, but we can meet virtually. I am pleased and excited to let you know that a mini-conference, comprising of four invited talks, is being arranged to follow our online AGM on December 2nd, 2021. This will be a short event, lasting approximately two hours. The AGM notice, and details of the mini conference, will be emailed to members soon.

New dates have also been set for our postponed Bay of Islands conference. Please mark in your diaries, with a thick red pen, the dates November 27th to 1st December 2023 to be at the Copthorne Hotel and Resort Bay of Islands, Waitangi, New Zealand. As was intended for 2021, the 2023 conference aims to be a joint event with Statistics in Ecology and Environmental Monitoring (SEEM).

Congratulations, and many thanks, to Kevin Murray for representing our region on the IBS Representative Council for another four years. The ongoing success of our Society, both at the regional and international level, relies heavily on members' willingness to participate and contribute to the Society's many events and initiatives. There are lots of opportunity to make important contributions to the workings our Society - for example, conference organisation and governance. If you are interested in becoming more involved within our regional society, or at the international level, then please feel free to contact me to discuss opportunities.

I want to wish all our members, and their families, friends and colleagues, all the very best in these challenging Covid-19 pandemic times.

I am looking forward to seeing you virtually at our AGM in December!

Best wishes,

Vanessa Cave

The Australasian Regional Council at present:

Australasian Regional Council

President	Vanessa Cave (AgResearch Ltd)
Past-President	Alan Welsh (The Australian National University)
Secretary	David Baird (VSN NZ)
Treasurer	Ian Renner (University of Newcastle)
Membership Officer	Sam Rogers (University of Adelaide)
Social Media Officer	Emi Tanaka (University of Sydney)
Public Officer	Warren Müller (CSIRO)
Newsletter Correspondent	Rina Hannaford (AgResearch Ltd)
Regional Website Manager	Hans Hockey (Biometrics Matters)
IBS Executive Board	Chris Triggs (University of Auckland)
IBS Representative Council	Alison Kelly (Queensland Dept of Ag & Fish) Samuel Muller (Macquarie University) Kevin Murray (University of Western Australia)

The IBS-AR Member Code of Conduct can be found here:

<http://www.biometrics.org.au/docs/IBS-AR-Code-of-Conduct.pdf>

www.BiometricSociety.org.au



Facebook group: [IBS-AR](#)

Australian and New Zealand Virtual Statistical Conference 2021

More than two years ago, planning started for the ANZSC2020, a joint conference of the New Zealand Statistical Association (NZSA) and the Statistical Society of Australia (SSA). After everything was prepared for an exciting week at the Gold Coast, the pandemic happened, and the conference had to be postponed for one year. Slowly adjusting to the reality that any travelling will be difficult for a while, the ANZSC2021 was moving online.

On 5-9 July 2021, the conference finally happened with around 400 participants meeting virtually, attending more than 160 contributed talks, mini tutorials, and panel discussions. Highlights were, among others, the keynote lectures by Frauke Kreuter (Uni Mannheim, Uni Maryland), Kerrie Mengersen (QUT), Renate Meyer (UoA), Robert Gould (UCLA), Noel Cressie (Uni Wollongong), and Li-Chun Zhang (Uni Southampton).

Opening each conference day with a video from the Gold Coast, every attendant was probably regretting a bit not being able to join the conference in-person as previously planned, but the virtual platform based on Slack and Zoom presented an excellent alternative to connect and interact with fellow statisticians, especially during round table discussions, the Women in STEM event, the Trivia Night, and Would I lie to you ... statistically? A team of elves, organised by technical committee co-chair David Warton, was always present and guiding participants around the virtual platform, running training sessions, and helping with any technical problem.

Many thanks to everyone, who turned the event into a smoothly running meeting and a great success!

Daniel Gerhard

Organising Committee Co-chairs: Mark Griffin (SSA), Daniel Gerhard (NZSA)

Programme Committee Co-chairs: Berwin Turlach (SSA), Beatrix Jones (NZSA)

Technical Committee Co-chairs: David Warton (SSA), David Cowen

<https://anzsc2021.com.au/>

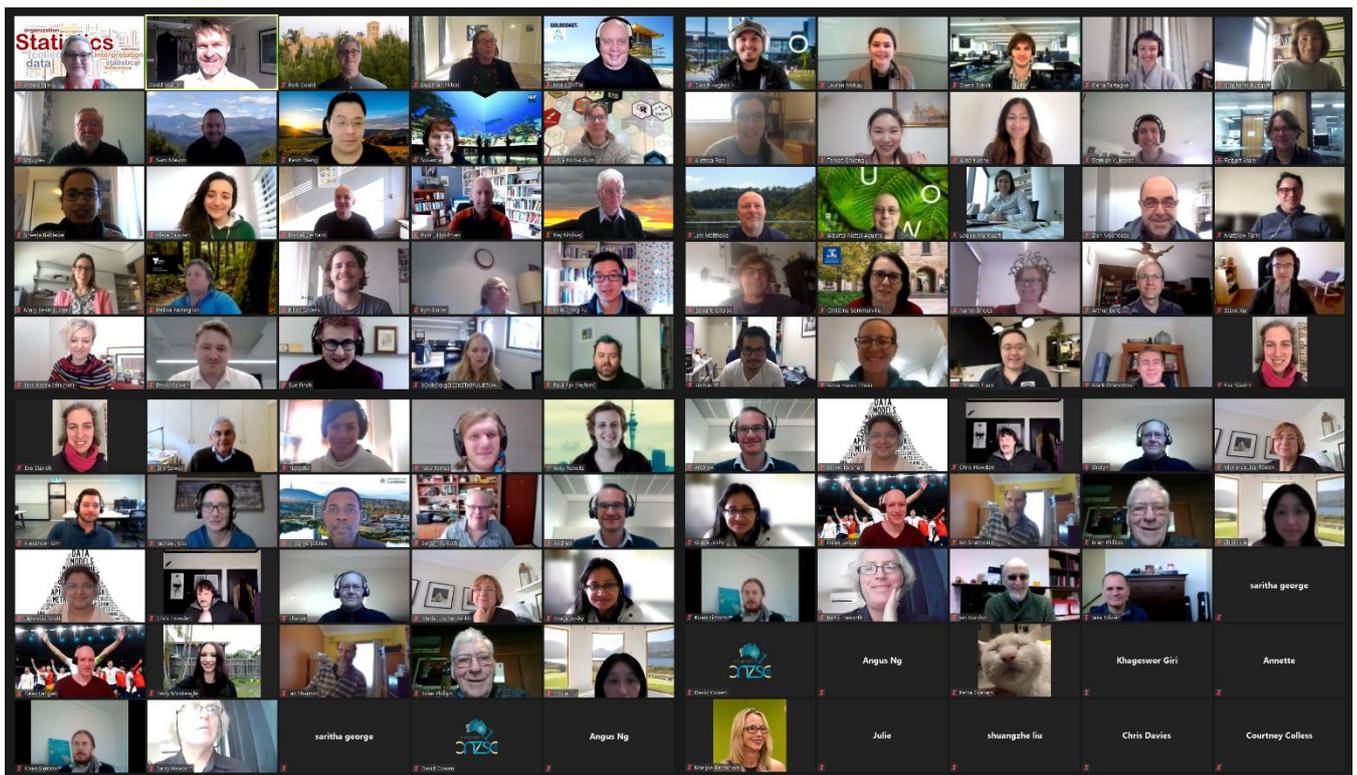


Figure 1: The ANZSC2020 conference photo

Presentation by Associate Professor Nicola Armstrong, Curtin University: Investigating epigenetic clocks

10 August 2021

Each year in August (since 2013, known as the Mario Birthday Seminar series) a joint meeting is held between the WA Branch of the Statistical Society of Australia (SSA) and the International Biometrics Society, Australasian Region (IBS-AR).

An IBS member presents the seminar and this year the speaker was Dr Nicola Armstrong, Associate Professor in Statistics and Data Science at Curtin University. A/Prof Armstrong completed her doctoral studies in Statistics at the University of California, Berkeley, and spent several years in the Netherlands before returning to Australia. Her research work has centred on the development of statistical methodology and the application of statistics to problems in genetics, genomics, and biomedical research.

The speaker focused on epigenetic clocks which use methylation markers to predict chronological age. DNA methylation is an epigenetic mechanism which regulates gene expression depending on the requirements of specific cells. Methylation data is expressed as the proportion of methylated fluorescence intensities for many thousands of loci captured in an array.

The first generation of clocks were developed in 2013 by applying elastic net regression to the methylation array data from individuals for whom both chronological age and DNA methylation data were available. Subsequent clocks have been developed by using methylation data from different tissue types, incorporating longitudinal data, and using techniques such as neural networks.

The clocks are made available to allow estimation of chronological age based on the nominated markers and associated coefficients. They have been used in research investigating stressors that contribute to accelerated epigenetic ageing and predicting mortality.

Nicola discussed many of the statistical issues involved with developing and using epigenetic clocks, noting that there was minimal correlation between the probes used amongst the published clocks. One major issue has been caused by the hardware, with the size and composition of the arrays changing over time, and with the arrays used in the early clocks becoming obsolete.

The generalisability of a clock will be affected by the composition of the training set and the tissue types used, and issues around data quality including missing data and techniques used in pre-processing can affect the results. Nicola also discussed the potential misuse of the clocks.

Following the presentation, further discussions were held at a nearby restaurant. Special thanks to SSA WA Branch and IBS-AR for the pre-dinner drinks and post-dinner cake/coffees, respectively.



Figure 3: The ex-IBS-AR President Mario enjoying his birthday cake and an Italian Beer at the restaurant with the rectangular Torta layered with Nutella surrounded by so many good wines and friends! A careful row x column design was used to allocate the optimal size piece to each of the revellers!

IBS-AR Student Scholarship Recipients

To help attract enthusiastic and talented students to career paths in biometrics, the Australasian Region offers scholarships for suitably qualified students who intend to undertake a fourth or honours year of study, or a coursework Masters, in statistics, mathematical statistics, biostatistics, bioinformatics or biometrics. We are delighted to announce the winners of this year's highly contested award: *Vicky He* (Honours student at the University of Otago) and *Kieren Brodrik* (Honours student at the University of Wollongong). Congratulations!

Biography – Vicky He



I am always passionate about science, so my high school subjects were all science-related. For my undergraduate study, I first chose psychology as my major. But then I thought statistics would help me with my research in psychology, and I decided to add statistics to my major as well.

Throughout my undergraduate degree, I learned a lot of fascinating psychology studies, and I also learned the importance of statistics in research. In addition to that, the statistics department at the University of Otago is absolutely fantastic, the people there always make me feel loved, and the department has nice coffee machines :-)

Anyway, after three year of undergraduate studies, the statistics department successfully converted me, and I am now studying towards an Honours degree in statistics. However, I still like psychology and neuroscience, so my Honours project is about analysing neuroimaging data, with a focus on Diffusion Tensor Imaging, under primary supervision of Dr. Matthew Schofield. There are many interesting (and hard) problems around the standard analysis pipeline, and we wished to improve the standard methods.

If I can survive my Honours year, I would love to carry out future studies in statistics! I hope I can do a PhD next year so that I can learn more about exciting research in statistics. I also look forward to new challenges in the future.

Biography – Kieren Brodnik



My name is Kieren Brodnik and I am currently undergoing my Honours degree in Mathematics at the University of Wollongong with the Centre of Bioinformatics and Biometrics (CBB) under the supervision of Professor Brian Cullis. I completed my HSC in 2017 at Smiths Hill High School in Wollongong and continued on with my studies to undertake a Bachelor's degree in Mathematics (Advanced) with a double major in Mathematics and Statistics.

I completed a Summer internship program with CBB after my second year of university and loved working with the team in areas of applied statistics such as single site analysis on field data. This experience was an extremely rewarding one and gave me a strong interest in the field of biostatistics which led to myself undertaking an Honours degree with CBB. I am excited to continue working in this area of statistics as I believe it is making a strong difference to the world and is allowing me to develop as a statistician in the real world.

Outside of academia I am an extremely active person. I currently play first grade football in the Illawarra Premier League which takes a large amount of commitment. As well as this, I also climb regularly both indoors and outdoors. I also love to play music with my friends which is something I have grown to love over the years. I have found that it is super important to maintain a strong balance of keeping active and focusing on studies in order to get the most out of my work and still live a balanced lifestyle.

I am honoured to have been awarded an IBS-AR scholarship as I have been working extremely hard in my degree and really appreciate being recognised for such a prestigious award. I'm excited to continue working with CBB in applied statistics for the future to come both in my current Honours degree and any projects which may arise after the Honours degree is complete.

New Members

Welcome to:

- Jennie Carson
- Kylie Lange
- Rishika Chopara
- Sophie Jones
- Pei Luo

- David Chan
- Thomas Yee
- Jing Liu
- Ben Stevenson
- Claudia Rivera-Rodriguez
- Nicola Armstrong
- Michelle Ocampo
- Craig Pickett
- Royston-Luke Huang
- Michael Mumford
- Firouzeh Noghrehchi
- Kieren Brodrik
- Vicky He
- Richard Tawiah
- Angelika Pilkington
- Omer Ozturk
- Beata Sznajder
- Russell Edson
- Mario Fruzangohar
- Xinyuan Fu

Membership as of 8th November 2021:

Life Member	3
Regular Member	164
Senior Retiree	15
Student Member	28
Supporting Member	5
Grand total	215

Did you know?

Along with the new membership portal (<https://ibsar.wildapricot.org/>) where you can update your personal details and manage membership renewal payments, there are some new options for renewing your membership!

Firstly, there is the option of direct debit membership payments which require no reminders or manual input. To activate direct debit membership, simply log in to your member page and change your membership type to "Regular/Senior Retiree (Automatic Renewal)".

Secondly, payment of memberships up to three membership years in advance is now possible. For extended membership payments or any other membership queries, please contact the Membership Officer (Sam Rogers) via membership@biometricsociety.org.au

Recent Papers

The International Biometrics Society publishes two journals, Biometrics and, jointly with the American Statistical Association, the Journal of Agricultural, Biological, and Environmental Statistics.

There were no papers recently published by our members in these journals but please feel free to submit manuscripts using either of the links:

<https://biometrics.biometricsociety.org/> (see that Alan Welsh is a co-editor)

or <http://www.editorialmanager.com/jabe/>

If your paper has been inadvertently omitted from this list, please email the editor (rina.hannaford@agresearch.co.nz) so that it can be included in the next edition.