

# Statistical Society of Australia

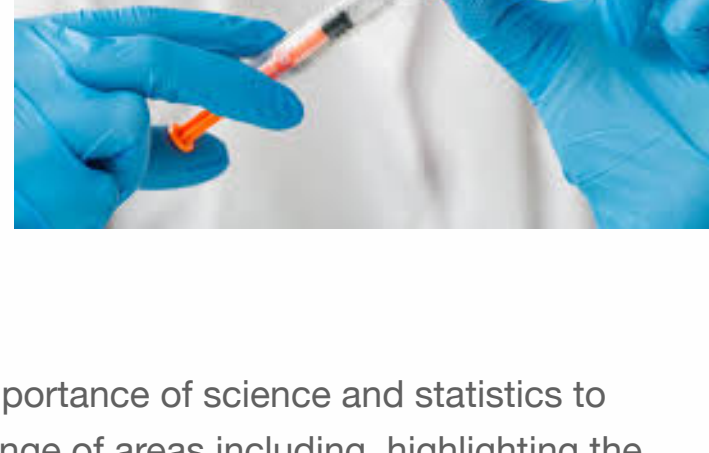
## SSA Biostatistics & Bioinformatics Newsletter

Q4 2020

Welcome to our final newsletter of 2020!

2020 has been a challenging and heartbreaking year for many and we hope all of our members are staying healthy and safe as this year closes. While devastating bushfires and the global pandemic have dramatically changed life for many, difficult times also bring many inspirational stories and positive changes. As of the 14th December, Australia has had 10 days without a locally acquired case of COVID-19 (details [here](#)).

A COVID vaccine has been approved in several countries and rollouts have commenced in the UK and Russia. Several other countries are preparing programs over the coming months. Further details can be found [here](#). Biostatisticians and bioinformaticians have been, and will continue to be, an integral part of research into these vaccines.



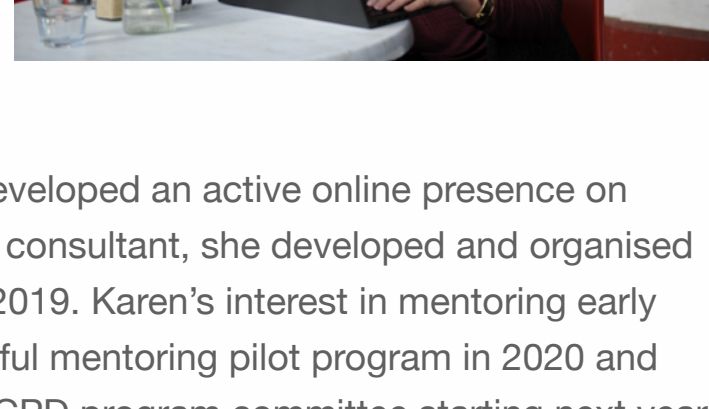
More broadly, the global pandemic has demonstrated the importance of science and statistics to society. Statisticians have provided essential services in a range of areas including, highlighting the magnitude and impact of the virus, providing predictive models on the spread of the disease that can be used in decision making, and being part of the teams that investigate potential treatments. The biostatistics and bioinformatics committee congratulates all of our members on the contributions they have made to science this year, whether they are COVID or non-COVID related.

This newsletter contains updates on our mentoring program pilot, interesting podcasts, information on upcoming events, meet the mailing list and a feature article. We hope you enjoy our last newsletter of the year.

The SSA Biostatistics and Bioinformatics section committee

## Thank You & Best Wishes!

Karen Lamb will step down from the Biostatistics and Bioinformatics Section committee at the end of this year to become a member of the SSA's Continuous Professional Development (CPD) program committee. Karen joined the section as a co-chair in 2017 together with Sabine Braat.



Driven by Karen's passion for communication, the section developed an active online presence on Twitter and Facebook. Inspired by her role as a biostatistical consultant, she developed and organised a workshop on gaining skills in biostatistical consultancy in 2019. Karen's interest in mentoring early career researchers resulted in the development of a successful mentoring pilot program in 2020 and she will be leading the SSA's mentoring full program via the CPD program committee starting next year (see more on this topic in this newsletter). The Biostatistics and Bioinformatics Section committee would like to thank Karen for her commitment and contributions during the past three years. We will miss Karen's enthusiasm for all things related to biostatistics and wish her all the best in her future endeavours on the CPD program committee!

## SSA Biostatistics & Bioinformatics section mentoring update



Cartoon courtesy of Dilbert by Scott Adams.

The end of November brought the end to our mentoring program and we want to say a massive thank you to the mentors and mentees who participated in the program this year. We really appreciate the time you invested in the program, as well as the feedback you provided us on what worked for you (and, indeed, what didn't). The final feedback survey was circulated to mentors and mentees at the beginning of December. This feedback will be used to help us develop a mentoring program across the whole society in 2021 through the Continuous Professional Development Committee.

We also wanted to thank those of you who reached out to assist in expanding the mentoring program. Karen Lamb has formed a small committee of SSA members who are currently working hard to get a program ready to launch during the first quarter of 2021. Our new committee is excited to be able to continue supporting SSA members in building connections and getting support in developing their careers. We look forward to meeting more of you soon.

If you want any further information about the mentoring program, please feel free to contact Karen Lamb at [klamb@unimelb.edu.au](mailto:klamb@unimelb.edu.au).

## SSA webinars and events

### ANZSC 2021

The Australian Statistical Society and New Zealand Statistical Association Conference will be held from the 5-9th July 2021. Due to ongoing uncertainty with the COVID-19 pandemic, this conference will be held online for the first time. This conference brings together three leading statistical communities – the [Statistical Society of Australia](#), the [New Zealand Statistical Association](#) and the [Australian Conference on Teaching Statistics](#).



The aim is to bring together a broad range of researchers and practitioners across a variety of statistical disciplines to facilitate the exchange of theory, methods and applications.

Information on Keynote Speakers and the Conference program will be available shortly so check the [website](#) for updates. The organising committee reports that ANZSC 2021 will be a truly amazing new experience providing fresh new opportunities on both a professional and a social level.

### Develop your online profile

This course by Science in Public is sponsored by the Australian Bureau of Statistics and is free for SSA members and ABS staff. This online session will show you how to develop your public profile as a scientist using websites, Twitter, Facebook, LinkedIn and other social media platforms. This session explores why you might want a higher profile, who your communities of interest are, thinking and working strategically, sharing content, and keeping out of trouble. Limited spaces are available [here](#).

More upcoming SSA webinars and events can be found [here](#).

## Other upcoming events

While there are generally a range of other events of interest for our biostatisticians and bioinformaticians, the schedule of events have been substantially impacted by the COVID pandemic and many events have been cancelled. Please always check out the conference website to ensure you have the latest information on the conference. On the other hand, this has led to the creation of many virtual events that are often more affordable and accessible. Here are a small selection of upcoming events:

### VICBiostat workshops

The Victorian Centre for Biostatistics (VICBiostat) will hold their annual series of workshops in February 2021. Registration is now open for workshops on multiple imputation, adaptive trial designs, and the estimand framework. The workshops will be held online in the form of a half-day session each day. More information can be found [here](#).

### AMSI summer school 2021

The annual Australian Mathematical Sciences Institute will hold their annual summer school as a virtual event in January 2021. The summer school offers eight subjects from specialist lecturers around Australia. It gives students the opportunity to develop their mathematical skills, meet like minded people and network with future employers. Registration is available via the [AMSI webpage](#).

### Spatial and Temporal Statistics Symposium

The Spatial and Temporal Statistics Symposium (STSS) will be held virtually from 17th to 19th February 2021. The STSS is sponsored by MATRIX and AMSI and is designed to get PhD/Masters/Honours students with similar interests together. Senior researchers are also welcome to attend. Registration is free and funding is available for post-symposium collaborative projects. Further information can be found [here](#).

### 63rd ISI World Statistics Congress 2021

The 63rd International Statistical Institute Congress 2021 will be held virtually from 11th to 16th July 2021. The programme will provide the platform to learn about the latest developments in statistical research and practice in an informal ambience. A series of short courses, satellites and other events completes the programme. Further information can be found [here](#).

If you would like to advertise any upcoming biostatistics or bioinformatics events to our mailing list, please contact one of our co-Chairs, [Sabine Braat](#) or [Jaimi Greenstade](#).

## Meet our mailing list



**Name:** Chris Woodruff

**Where do you currently work.** I work at the Walter & Eliza Hall Institute of Medical Research in the Speed Lab of the Bioinformatics Division.

**What field do you associate with, biostatistics or bioinformatics (or both)?** I have never used the term biostatistics to describe what I do. I work in Bioinformatics, with data handling and interpretation being the focus of my work.

In this process I use statistical and probabilistic reasoning, as well as knowledge of biology, physics and chemistry.

**What are your background studies in and how did you join this field?** My primary training is in mathematics and physics – primarily the latter. I also have research qualifications in cognitive psychology, and teaching qualifications. I joined this field following retirement from formal employment, and my approach to Prof Speed to work with his team was accepted, because my final working years brought me into the exciting world of biology and the challenge, and value, of using my quantitative skills and scientific knowledge in this domain.

**Why did you want to work in this field?** My final years brought me into the exciting world of biology. I wanted to take on the challenge of using my quantitative skills and scientific knowledge in this domain, both because of the potential contribution I could make and the satisfaction I might get from the research and engagement with other researchers.

**What is the most exciting concept/idea upcoming in your work or field?** There are so many! Understanding the symbiosis of the human host and the various microbiomes that are an integral part of the exo- and entero-environment that the human inhabits is one. Single-cell resolution -omics studies and their integration to understand human and other organism functioning is another.

**If you didn't pursue biostatistics and/or bioinformatics, what would have been your alternate career?** I've had a full career before I started in bioinformatics – teaching science, and then 32 years of defence science research across multiple disciplines. I hardly think of my current activity as a career – I see no organisational role, I seek no "advancement". If I hadn't got into bioinformatics I probably would have had a low key, laid back retirement. That is now indefinitely delayed.

### Want to be featured in the next member profile?

We are always in need of more member profiles. It's a great way to get some exposure to our >300 readers. If interested, please let [Nicole De La Mata](#) or [Alysha De Livera](#) know.



## Podcasts



A range of biostatistics and bioinformatics blogs and podcasts have been listed in our [previous newsletters](#). Here we will be highlighting a couple of podcasts that might interest our mailing list readers.

### The Random Sample

This podcast is hosted by the Australian Research Council Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS). It gives an insight to the world of mathematics and statistics presented by a range of researchers, including the SSA president Prof Adrian Barnett and SSA member Dr Susanna Cramb. Check out [available episodes here](#).



### More of Less: Behind the Stats

This BBC podcast is presented by Tim Harford, an English economist, author and journalist, best known for his long-running Financial Times column "The Undercover Economist". It covers a range of topics to make sense of the statistics around us, including hot topics like COVID, vaccines and elections. All episodes [available here](#).



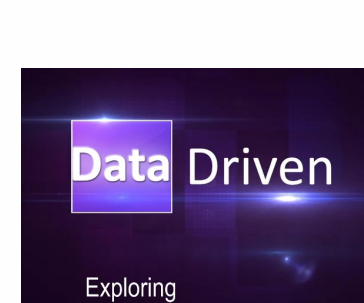
### Talking Machines

Founded by Katherine Gorman, journalist and radio broadcaster, and Ryan Adams, Director of Machine Learning at the Amazon Research Cambridge. This podcast delves into world of machine learning bringing conversations with experts, discussions with industry, and answering those difficult questions. Check out [all episodes here](#) and also [their website](#).



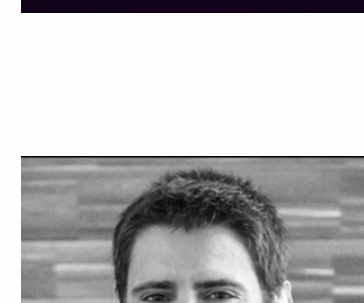
### Data Driven

Co-hosted by Frank La Vigne, software engineer and data scientist, and Andy Leonard, engineer and author in data integration. They say "Data is the New Oil", and if data drives you then this podcast is for you! Covering data science and analytics, machine learning, artificial intelligence and more. Episodes can be [found here](#), as well as their [website](#) and [blog](#).



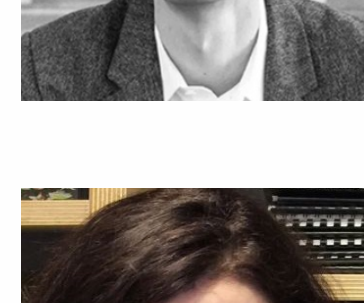
### Miguel Hernán on Big Data and Public Health

In this episode of the Harvard T.H. Chan School of Public Health Podcast series, Professor Miguel Hernán explains how vast amounts of information can be used to assess what works in medicine and public health. Listen to the podcast [here](#).



### A Conversation with Louise Ryan

Adjunct Professor of Biostatistics and former Department Chair Louise Ryan recently participated in a podcast and eagerly to discuss her career and advice for PhD students and early career researchers. Listen to the full conversation [here](#).



### Do you have a favourite statistical podcast or blog?

If you would be happy to provide a brief overview of your favourite statistical podcast or blog to feature on our mailing list, please contact [Alysha De Livera](#) with the details.

## Featured articles

### So you think you can PLS-DA?

Ruiz-Perez, D., Guan, H., Madhivanan, P. et al. So you think you can PLS-DA?. *BMC Bioinformatics* 21, 2 (2020).

Partial Least-Squares Discriminant analysis (PLS-DA) is increasingly being used for feature selection and classification in analysis of omics data. PLS-DA is a machine learning technique that can be "thought of as the 'supervised' version of Principal Component Analysis (PCA)". As a result, it is prone to overfitting and its role in discriminant analysis is often "misused and misinterpreted". In their paper, Ruiz-Perez and colleagues compare the performance of PLS-DA and PCA using simulations as well as using a microbiome dataset, showing that in some cases the 'simple' PCA approach outperforms the supervised PLS-DA. Using multiple performance metrics, they highlight the importance of correct application and interpretation of PLS-DA.

### 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 [Nicole De La Mata](#) with the details.

## Closing comments

Our Section Committee 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 our members, especially regarding ideas for future events, presentations, webinars or workshops held by the SSA Biostatistics & Bioinformatics section.



We also are interested in hearing about our members and how they became involved in biostatistics or bioinformatics. Please contact us via our section co-Chairs, either [Sabine Braat](#) or [Jaimi Greenstade](#) regarding these or any other related queries. We wish our members a happy and safe festive season and look forward to hearing from you in 2021.

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 with over 755 followers on Facebook and 584 on twitter. If you have any material you would like us to promote on our social media outlets or share with the fellow members, please let [Sabine Braat](#) know.



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