



# The Statistical Society of Australia News

SSAI 

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### President's Column

## INTERESTED IN ADVOCACY, OUTREACH AND THE MEDIA? THE SSA NEEDS YOU!

The SSA is the peak professional body for statisticians in Australia, and collectively its members embody vast amounts of expertise and experience in statistically-related matters. This expertise is frequently recognised by the media: individual members are regularly interviewed by the press and television networks. Recent examples of this include member interviews on the 2016 census, injury prevention through the use of bicycle helmets, and, inevitably, the odds of winning the Melbourne Cup.

It is important that the SSA plays, and is seen to play, an active and leading advocacy role in the public understanding of statistics and their correct usage. We have all seen poor usage of statistics in the press, even in the supposedly "quality" media. For example, see The Economist's recent use of correlation linking an actor's "bankability" to the number of gun models used per movie, where the observed relationship is essentially determined by 4 data points (<https://t.co/oDz8EmHDf>). There are also many examples of more subtle problems with the general public's understanding of variability and the issues involved in proper data analyses.

So what advocacy activities should the SSA be performing? These are many and varied, but could encompass a public education role, providing expert (and unbiased) commentary on topical issues of social importance involving statistics, providing support materials and opinions on statistical issues to journalists and the media, producing opinion pieces for The Conversation, producing official SSA position papers on important issues and providing SSA responses to e.g. government agency calls for feedback to inform their policies, to name but a few.

To this end, the SSA is putting together a Media & Outreach group to take on this role – to build the Society's public profile, while contributing to improving national statistical literacy. Are you someone who could be interested in contributing to this effort? From Young Statistician to retiree, all that is needed is a passion for advocacy and communication, and a willingness to contribute on an occasional basis. The Media & Outreach group is also looking for a motivated chair who has clear ideas on the direction the SSA should be taking in this sphere. If you are interested in any of these roles, please send your contact details to Marie-Louise ([eo@statsoc.org.au](mailto:eo@statsoc.org.au)). I look forward to working with each of you on this extremely important task.

**Scott A. Sisson**



President  
Scott Sisson

December 2016  
Issue 157

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**DEADLINE FOR NEXT NEWSLETTER  
10 February 2017**



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## FROM THE ACTING EDITOR

ASC 2016 is almost upon us, and the program (available on the Conference web site) looks particularly interesting. I am looking forward to hearing some stimulating presentations, catching up with old friends, and making some new acquaintances.

The Conference will include sessions in memory of Peter Hall and Joe Gani. As we remember these greats of Australian statistics, we should also remember another Australian who made major contributions – Graham Wilkinson. Graham died in September of this year. He was an early leader in the interface between statistics and computing, most notably in the development of GenStat. He was awarded SSA's Pitman Medal in 2000, and will be fondly remembered as one of the outstanding characters of Australian statistics. More details about Graham are on the SSA web page.

I would like to express SSA's thanks to all those who have contributed to the Newsletter this year, and particularly to Marie-Louise Rankin who makes it happen. I wish all SSA members a happy holiday season, and look forward to hearing more of your exploits in 2017.

**Doug Shaw**  
Acting Editor



## EVENTS

### AMSI SUMMER SCHOOL 2017

9 January - 2 February 2017, Sydney

### PREVENTION AND TREATMENT OF MISSING DATA

28 February- 1 March 2017, Sydney

### INTERNATIONAL CONFERENCE ON ROBUST STATISTICS 2017

3-7 July 2017, Wollongong

### JOINT INTERNATIONAL SOCIETY FOR CLINICAL BIostatISTICS AND AUSTRALIAN STATISTICAL CONFERENCE 2018

26-30 August 2018, Melbourne

To have your event added to this list, please forward the event details in the above format to [eo@statsoc.org.au](mailto:eo@statsoc.org.au)

A list of international events can be accessed here: <http://www.statsoc.org.au/events/other-events-international/>

## SECTION CHAIRS

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c.drovandi@qut.edu.au  
Assistant Chair: vacant  
<http://www.statsoc.org.au/sections/bayesian-statistics.htm>

### Environmental Statistics

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dwardon@maths.unsw.edu.au  
Co-Chair: Jakub Stoklosa  
j.stoklosa@unsw.edu.au  
Assistant Chair: vacant  
<http://www.statsoc.org.au/environmental-statistics.htm>

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M.Haynes@uq.edu.au  
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srthorn@effect.net.au  
Assistant Chair: vacant  
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### Biostatistics

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j.olivier@unsw.edu.au  
Assistant Chair: Nicholas Tierney  
Nicholas.Tierney@gmail.com  
[http://www.statsoc.org.au/medical\\_statistics](http://www.statsoc.org.au/medical_statistics)

### Section for International Engagement

Mark Griffin  
m.griffin@adasis-oz.com  
Assistant Chair: vacant  
<http://www.statsoc.org.au/IntEngagementSection>

### Young Statisticians' Network

Vacant  
<http://www.statsoc.org.au/about-young-stats.htm>

Further contact details for Society Secretaries and Section Chairs can be obtained by contacting the Society on (02) 6251 3647. If you are interested in applying for any of the vacant positions, please contact the Executive Officer ([eo@statsoc.org.au](mailto:eo@statsoc.org.au)).



## SSA CENTRAL COUNCIL

### Executive Committee

President: Scott Sisson  
Secretary: Doug Shaw  
[secretary@statsoc.org.au](mailto:secretary@statsoc.org.au)

### Branch Presidents and Branch Secretaries

#### Canberra

President: Robert Clark  
Secretary: Warren Müller  
[secretary.canberrabranch@statsoc.org.au](mailto:secretary.canberrabranch@statsoc.org.au)

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[vic.branch@statsoc.org.au](mailto:vic.branch@statsoc.org.au)

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Secretary: Tom Davidson  
[tom.davidson@abs.gov.au](mailto:tom.davidson@abs.gov.au)

## ARE YOU ACCREDITED?

Are you aware that the Statistical Society runs a very successful Accreditation program? It was implemented in 1998 and we currently have over 120 members with AStat Accreditation and about 30 members with GStat Accreditation. To find out more about the program please go to <http://www.statsoc.org.au/careers-accreditation/professional-accreditation/>.

The Statistical Society would like to congratulate the following members on their recent AStat Accreditation:

Diane Hindmarsh	Sabine Braat
Brigid Betz-Stablein	Alan Herschtal
Peter Geelan-Small	Damjan Vukcevic
Dimitrios Vagenas	Andrew Ward
Jake Olivier	Belinda Butcher
Hwan-Jin Yoon	Stephen Horn
Lee Jones	Geoff Adams
Emma Knight	Joanne Leadbetter



## CONGRATULATIONS TO OUR MEMBER

### JOSHUA ROSS, WHO WAS AWARDED THE

### 2017 MORAN MEDAL

Associate Professor Joshua Ross of the School of Mathematical Sciences, The University of Adelaide, has made important and influential contributions to Applied Probability and Statistics, and through application to Conservation Biology and Public Health. His research has focused predominately on addressing problems arising in infectious disease epidemiology and conservation biology, though the methodological developments that he has provided to solve such problems are more widely applicable. These application topics are of great importance, and his contributions to these fields are significant.



Photograph courtesy of Ben Osborne, University of Adelaide

Associate  
Professor  
Joshua Ross

# WHERE CAN AMSIIntern TAKE YOU?

TECHNOLOGY SYDNEY - INTELLIGENT ENERGY SYSTEMS PTY LTD DEAKIN UNIVERSITY - KCROWN, ECO GREEN PRODUCTS THE UNIVERSITY OF THE UNIVERSITY OF SYDNEY - ACP SALES LA TROBE UNIVERSITY - ADALTA RMIT UNIVERSITY - AEROCUTE INTERNATIONAL PTY LTD MONASH UNIVERSITY - AGILENT TECHNOLOGIES AUSTRALIA PTY LTD RMIT UNIVERSITY - AGRITECHNOLOGY PTY LTD THE UNIVERSITY OF QUEENSLAND - ANTEO DIAGNOSTICS DEAKIN UNIVERSITY - ANZ BANKING GROUP LA TROBE UNIVERSITY - ANZ BANKING GROUP MONASH UNIVERSITY - ANZ BANKING GROUP RMIT UNIVERSITY - ANZ BANKING GROUP RMIT UNIVERSITY - ASSURANCE PTY LTD DEAKIN UNIVERSITY - AUS PITS DEAKIN UNIVERSITY - AUSTRALIAN INFORMATION SECURITY ASSOCIATION UNIVERSITY OF TECHNOLOGY SYDNEY - AUSTRALIAN NATIONAL COURIERS THE AUSTRALIAN NATIONAL UNIVERSITY - AUSTRALIAN PRUDENTIAL REGULATION AUTHORITY QUEENSLAND UNIVERSITY OF TECHNOLOGY - AUSTRALIAN TOURISM DATA WAREHOUSE RMIT UNIVERSITY - BAE SYSTEMS RMIT UNIVERSITY - BARDEN FABRICATIONS RMIT UNIVERSITY - BASS COAST SHIRE COUNCIL LA TROBE UNIVERSITY - BIARRI NETWORKS RMIT UNIVERSITY - BIARRI NETWORKS VICTORIA UNIVERSITY - BIG NETWORKS PTY LTD THE UNIVERSITY OF QUEENSLAND - BILEXYS PTY LTD LA TROBE UNIVERSITY - BLADE ELECTRIC VEHICLES SWINBURNE UNIVERSITY OF TECHNOLOGY - BMT DESIGN & TECHNOLOGY RMIT UNIVERSITY - BRITANNIA LA TROBE UNIVERSITY - BUREAU OF METEOROLOGY THE UNIVERSITY OF MELBOURNE - BUREAU OF METEOROLOGY THE UNIVERSITY OF NEW SOUTH WALES - BUREAU OF METEOROLOGY THE UNIVERSITY OF QUEENSLAND - BUREAU OF METEOROLOGY THE UNIVERSITY OF QUEENSLAND - CANON INFORMATION SYSTEMS RESEARCH AUSTRALIA PTY LTD THE UNIVERSITY OF SYDNEY - CANON INFORMATION SYSTEMS RESEARCH AUSTRALIA PTY LTD UNIVERSITY OF TECHNOLOGY SYDNEY - CANON INFORMATION SYSTEMS RESEARCH AUSTRALIA PTY LTD DEAKIN UNIVERSITY - CARDINIA SHIRE COUNCIL RMIT UNIVERSITY - CARDINIA SHIRE COUNCIL THE UNIVERSITY OF ADELAIDE - CARL ZEISS VISION PTY LTD MONASH UNIVERSITY - CERAMIC FUEL CELLS LIMITED MONASH UNIVERSITY - CITY OF MELBOURNE RMIT UNIVERSITY - CITY OF MELBOURNE MONASH UNIVERSITY - CIVIL AVIATION SAFETY AUTHORITY MONASH UNIVERSITY - CLARINOX TECHNOLOGIES PTY LTD THE UNIVERSITY OF MELBOURNE - CLARINOX TECHNOLOGIES PTY LTD UNIVERSITY OF TECHNOLOGY SYDNEY - COMMONWEALTH BANK OF AUSTRALIA RMIT UNIVERSITY - CREATIVE ANALYTICS MACQUARIE UNIVERSITY - CSIRO UNIVERSITY OF TECHNOLOGY SYDNEY - CSIRO LA TROBE UNIVERSITY - CSL LIMITED MONASH UNIVERSITY - CSL LIMITED THE UNIVERSITY OF MELBOURNE - CSL LIMITED MONASH UNIVERSITY - CURIOLEX RMIT UNIVERSITY - DAIRY AUSTRALIA RMIT UNIVERSITY - DEFENCE SCIENCE AND TECHNOLOGY GROUP SWINBURNE UNIVERSITY OF TECHNOLOGY - DEFENCE SCIENCE AND TECHNOLOGY GROUP THE AUSTRALIAN NATIONAL UNIVERSITY - DEFENCE SCIENCE AND TECHNOLOGY GROUP THE UNIVERSITY OF ADELAIDE - DEFENCE SCIENCE AND TECHNOLOGY GROUP THE UNIVERSITY OF MELBOURNE - DEFENCE SCIENCE AND TECHNOLOGY GROUP THE UNIVERSITY OF SYDNEY - DEFENCE SCIENCE AND TECHNOLOGY GROUP UNIVERSITY OF SOUTH AUSTRALIA - DEFENCE SCIENCE AND TECHNOLOGY GROUP LA TROBE UNIVERSITY - DEPARTMENT OF ENVIRONMENT AND PRIMARY INDUSTRIES UNIVERSITY OF TECHNOLOGY SYDNEY - ENERGY AUSTRALIA MACQUARIE UNIVERSITY - ENWARE AUSTRALIA PTY LTD THE UNIVERSITY OF MELBOURNE - EPSILON SECURITY THE UNIVERSITY OF NEW SOUTH WALES - OMNI TANKER PTY LTD UNIVERSITY OF TECHNOLOGY SYDNEY - FLEET FLYERS SWINBURNE UNIVERSITY OF TECHNOLOGY - FRONTIER ADVISORS PTY LTD THE AUSTRALIAN NATIONAL UNIVERSITY - GEOSCIENCE AUSTRALIA WESTERN SYDNEY UNIVERSITY - GEOSCIENCE AUSTRALIA MONASH UNIVERSITY - GLAXOSMITHKLINE AUSTRALIA PTY LTD THE UNIVERSITY OF MELBOURNE - GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY MONASH UNIVERSITY - GREY INNOVATION THE UNIVERSITY OF MELBOURNE - HELLO MEDICAL SWINBURNE UNIVERSITY OF TECHNOLOGY - HENROB (UK) PTY LTD SWINBURNE UNIVERSITY OF TECHNOLOGY - IAS HEW PTY LTD THE UNIVERSITY OF QUEENSLAND - INTEGRATED LOGISTICS COMPANY PTY LTD THE UNIVERSITY OF SYDNEY - INTEGRATED RESEARCH LIMITED FEDERATION UNIVERSITY AUSTRALIA - INTELLIGENT ENERGY SYSTEMS PTY LTD LA TROBE UNIVERSITY - INTELLIGENT ENERGY SYSTEMS PTY LTD THE UNIVERSITY OF NEW SOUTH WALES - INTELLIGENT ENERGY SYSTEMS PTY LTD UNIVERSITY OF

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## SSA GOLDEN JUBILEE TRAVEL GRANT

**It provides overseas travel funds to the Society's student members, who can prove consecutive SSA membership for a minimum of two years and who wish to attend overseas conferences at which they present a paper or poster.**

A maximum of \$1000 is available per application, limited to a single trip during the course of the student's studies. Students will not be supported in their first year of study and will have had to be members of the Society for at least 2 years prior to the application deadline. Applications are required to be lodged in advance of travelling. In exceptional circumstances an application can be for post-conference support, but the application will then have to be made within 1 month of returning and the 2 year mandatory membership period prior to departure must still be met. Exceptional circumstances are limited to unforeseeable student out of pocket expenses arising from other funding sources not fulfilling their obligation or changes to the trip that could not have been avoided.

### **A complete application will consist of**

- Information on the conference and its importance to student's work (2-3 lines)
- Details of the paper/s/poster student wants to present at the conference
- A list of other funds sought or promised, including student's home institution
- Student's out of pocket expenses expected
- Any other supporting material student feels is necessary
- A letter of support SIGNED by one of student's supervisors AND student's Departmental Head
- Student's CV

**The application deadline is 31 March 2017.**



If successful the student member is required to produce original receipts for amounts of equal or greater value than the grant. These receipts will be returned to the student marked with how much has been reimbursed. The student will therefore still be able to use the receipts for proof of attendance or to claim any funding shortfall from other organisations. The student member will also need to supply a report of his or her involvement in the conference to be published in the SSA newsletter. This report should confirm the actual travel details and papers presented.

Recipients of the grant are asked to acknowledge the SSA's support in the presentations and in any published version of the paper.

One travel grant is available per year. Assuming that more than one application will be received per year, either the Executive Committee or a special committee would help with the selection process.

For more information or to apply, contact the SSA Office ([eo@statsoc.org.au](mailto:eo@statsoc.org.au)).

With this travel grant program the SSA seeks to underline its objective to further the study, application and good practice of statistical theory and methods in all branches of learning and enterprise. It has been implemented to confirm to members that the SSA is willing to support student statisticians and their budding careers.



## Make It Cheaper identifies \$1,800 electricity savings for SSA member\*

Did you know that some energy retailers can switch you to a higher rate or lower discount when your contract expires? It happens. Make It Cheaper want to make sure it doesn't happen to you.

That's why SSA partnered with **Make It Cheaper** – to help members save money on electricity. One member in NSW jumped on board and managed to **save \$1,800 per annum** for their household.

In fact **75% of SSA members** that have taken advantage of the Make It Cheaper service have found themselves a saving.

The service is completely free. To see what you could save, call Make It Cheaper directly on the SSA Members Hotline on **(02) 8077 0158** or email a copy of a recent electricity bill, with your contact details, to [ssa@makeitcheaper.com.au](mailto:ssa@makeitcheaper.com.au) for a free quote. It's that easy.

\* \$1,800 per annum, based on previous usage.

Note: This service is only available for members in the ACT, NSW, QLD, SA and VIC.



## 35% SSAI Member Discount Promotion with Wiley

**SSAI members receive a special discount of 35% on general online purchases with Wiley or Wiley-Blackwell (<http://www.wiley.com/statistics>).**

**A discount of 25% applies to textbooks. This offer excludes school books.**

To activate this benefit, please go to <http://au.wiley.com/WileyCDA/Section/id-410891.html>.

Register on the SSAI/Wiley Landing Page and from then on you can purchase Wiley books at the 35% discount *without use of a Promotional Code*. For those members outside of Australia and New Zealand, please use the Promo Code SDP92 at checkout to activate the discount. Members who registered on the Wiley site before the SSAI link was available may encounter problems when trying to get the discount. To get the new discount these members unfortunately need to register using another email address.

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Other overseas phone + 61 7 3354 8455

Email [custservice@johnwiley.com.au](mailto:custservice@johnwiley.com.au)

\*Excludes Higher Education and School Books

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## CANBERRA BRANCH

### May meeting

### IBM's perspective on the expanding role of big data and analytics across government

In May, members from both the Institute of Analytics Professionals of Australia (IAPA), and the Canberra Data Science Group, joined the Canberra Branch of the Statistical Society for refreshments and enjoyed a presentation on big data and computer-intensive analysis. IBM staff Juliane Gallina and Murray Bruce gave an interesting talk about IBM's perspective on the expanding role of big data and analytics across government.

Murray set the scene by distinguishing Structured data, typically found in databases, or tables which analysts are commonly familiar with, from Unstructured data, which is largely text-based, and which may be housed in various places: publications, documentation, and other online locations including social media applications, blogs, images or video. Murray explained that it was the recently-developed ability to target the large amounts of available unstructured data which is proving useful for agencies and organisations. For a particular discipline, searching and querying unstructured data from a variety of (selected) sources can provide information that can be used in making decisions for a specific case, such as medical diagnosis or health treatment management of an individual.

Murray provided an example of an Energy company where the use of unstructured data combined with complex computing tools have been used for storm-weather response management. Weather, financial and geographic information have been used together to help allocate resources to minimise disruption to, say, hospitals or schools, according to certain criteria. Murray provided other beneficial examples of using unstructured data for analysis including in the Tax and Human Services government departments, and commented how the computing tools can also provide a trail or record of how management decisions were made in such circumstances.

Early in the presentation Murray introduced the phrase 'cognitive computing', regarding the term as the foundation for providing the previously unseen advances in obtaining valuable information from unstructured data. 'Cognitive computing' (CC) struck me as a curious term. And naturally I think, the phrase should be regarded as a meme for the predictive ability of the text-based supervised learning methods used, rather than a reflection of an IBM computer's ability to think. Juliane continued the discussion on 'cognitive computing', cementing the notion that CC is clearly a Thing, and revealed that IBM's view or implementation of CC is a sophisticated Question and Answer system called Watson (named after a former Chairman and CEO of the company).

Juliane emphasised that the key objective of IBM's Watson was to "enhance, scale up and amplify human expertise" in the specific application area in which it is employed. The goal of the system is to assist the subject matter experts in doing their job with Watson emulating the steps in the Observe - Interpret - Evaluate - Decide cycle. The challenges for a computer in trying to untangle the ambiguity in human language was neatly punctuated with the refrain "noses can run, but feet can smell", and it was acknowledged that

> Continued on next page





the accuracy or appropriateness of any resulting answer or product from the tools relied on the quality of the training data or the “corpus of information” available for the application at hand.

Juliane and Murray's presentation on the potential rewards assembled through a complex, massively-parallelised mix of existing computing tools was interesting. The biggest achievement appears to be the integration of existing text processing tools with traditional methods of data analysis. On another occasion it would be good to hear about how the constituent parts of the aggregation of tools fit together. Or learn a little about how one of these parts may be implemented: the natural-language processing or the parallelisation perhaps.

**P. Tennant**

### July Meeting

## Semantics Meets Statistics - What Meaning in the Data?

In July, Dr. Kerry Taylor gave a talk to the Canberra Branch of SSA that introduced the audience to the semantic web (also known as linked data). Linked data is a publishing style where data can be published so it can be integrated with other published data. One of the big advantages of linked data is that you develop a data sharing architecture that isn't tied to the lowest common denominator of the community, as the format for the data is already defined. The RDF DataCube was introduced as a linked-data ontology that allows statistical data to be independently published and accessed by users with R and SAS. An example was presented of data from the Australian Geoscience DataCube being used to create satellite imagery as linked data in order to create a best practice guide to link various geometries to places. This gives us the opportunity to demonstrate integration with statistical data (like demographics) of the kind sought by the United Nations Expert Group on the Integration of Statistical and Geospatial Information. Other examples of connecting semantic techniques with statistical problems were also touched on, including data linking for linked data. Despite claiming to not be a statistician, Dr. Taylor still succeeded in teaching the 25-strong audience a few new things!

**Daniel Fearnley**

## Yuguang Fan – “Clustering partially observed functional data”

In the August Canberra branch meeting, Dr Yuguang Fan gave a talk based on her recent work as a research fellow from Australian Centre of Excellence for Mathematical and Statistical Frontiers at the University of Melbourne. She will return to ANU as a lecturer in the Research School of Finance, Actuarial Studies and Statistics, where she completed her PhD in 2015.



Yuguang discussed the clustering algorithms when the observations are short and scattered fragments in the longitudinal data, for which other clustering methods for sparse functional data are not appropriate. The proposed weighted k-means algorithm uses weight criterion based on the length of the fragments and combines two standardized quantities (mean and first derivative). This line of work is an extension from the k-means algorithm by exploring the idea that the first derivatives are different at the crossing of two curves. She further introduced the connectivity index to identify the fragments around the crossing of clusters and the gap criteria when observing gaps in the data.

The asymptotic properties of the objective function were discussed and Yuguang showed three simulations with different lengths of fragments. The performance of the proposed weighted k-means algorithm was compared against that of the two k-means algorithms and two other clustering algorithms used for sparse data. The classification accuracy of the clustering algorithms was evaluated through the purity index and the adjusted Rand index. The influence of the intervals was also considered through the common coverage proportion index. The simulation results showed that the weighted k-means algorithm performs better when the fragments are short. The talk was wrapped up nicely with an example of applying the weighted k-means algorithm to the bone mineral density data separated by race.

Yuguang did an excellent job of delivering a stimulating and enjoyable talk. The discussion was also engaging and insightful following the presentation. We are looking forward to her return to Canberra in 2017.

**Pauline Ding**



### October Meeting

## Lessons Learned from my statistical journey (so far)

The Canberra Young Statisticians Event took place in October, with roughly 35 students coming to the SSA branch meeting to hear Ryan Defina speak about his experiences at both the Australian Bureau of Statistics and the Reserve Bank of Australia. Ryan outlined some of the different experiences you can have as a statistician, and some of the skills that are vital to succeeding in the field. The importance of having good mentors was highlighted, and the point was made that your mentors can inspire you for different reasons, and there's no reason you can't have more than one. Ryan also discussed some of the common pitfalls that should be avoided. He noted that it's important to find an area or two to specialise in rather than trying to be a jack of all trades but a master of none, and emphasised to the crowd that getting a job is not an excuse to ever stop learning. Finally, the building of networks was identified as a key skill for graduates. The presentation generated good discussion amongst the audience, most of whom stayed around for pizza and a chat after the talk.

**Daniel Fearnley**



## DEPARTMENT OF FISHERIES RESEARCH SCHOLARSHIP

***ECU in collaboration with the Department of Fisheries, Western Australia, is offering a postgraduate research scholarship to a highly motivated student with a background in statistical analysis to undertake research in the use of remotely-operated cameras for interpreting trends in fishing effort. The student will explore appropriate statistical and modelling methods required for the integration of estimates derived from camera monitoring and survey sampling, including Bayesian approaches.***

***The scholarship includes an annual tax-exempt stipend of \$27,000 over three years. The student will also be able to apply regularly for additional funding through the University's postgraduate funding scheme. The research will contribute towards a Doctor of Philosophy (PhD) at ECU.***

Opening date: 20th October 2016  
Closing date: 27th December 2016

### Eligibility Guidelines

To be considered applicants must:

- have a solid background in statistical analysis and competency in statistical computing packages such as R. Prior knowledge of Bayesian and spatial statistical techniques would be an advantage
- experience using WinBUGS and/or proficiency in programming with C/C++
- be available to commence in early 2017
- meet ECU's English and academic direct entry requirements for a PhD

Terms and Conditions

All applicants are encouraged to read the Scholarship Conditions (PDF) to understand the requirements on them as scholarship recipients.

How to Apply

For more information, contact:

Assoc Prof Ute Mueller [u.mueller@ecu.edu.au](mailto:u.mueller@ecu.edu.au) or

Dr Aiden Fisher [a.fisher@ecu.edu.au](mailto:a.fisher@ecu.edu.au)

### About the Scholarship

Recreational fishing is a popular activity in Western Australia, where over 30% of the population fish recreationally and contribute more than \$570 million a year to the State's economy. Remotely-operated cameras have been widely used in fisheries research, including studies examining the impacts of fishing and interactions with protected species. In this project, the capacity for remotely-operated cameras to improve knowledge of recreational fishing in Western Australia is being considered. Currently there are 24 cameras in total, some at public boat ramps, which provide data across an entire 24-hr day, 365 days a year. These cameras have the potential to validate and improve estimates of fishing effort from other ongoing survey techniques. The objectives of this project include the development of methods for estimating recreational fishing effort using boat retrieval data obtained from cameras at boat-ramps, and estimates of the proportion of boats fishing from on-site interviews and incorporating camera data into ongoing fisheries assessments using a weight-of-evidence approach.



## QLD BRANCH

### The journey of an errant statistician: Using science to tackle social problems

Ross Homel is a Foundation Professor of Criminology and Criminal Justice at Griffith University in Brisbane, Australia. He has won many awards for his research on the prevention of crime, violence and injuries and the promotion of positive development and wellbeing for children and young people in socially disadvantaged communities. In August, Ross gave the QLD statistic branch an overview of his career with an emphasis on the importance of statisticians engaging with researchers to improve data quality and interpretability.

Professor Homel proposes that we are at a turning point in the western world. Despite the enormous progress in improved wealth, health and wellbeing since the mid-1800s, politics and prejudice seem increasingly to trump science and evidence-based practice. He argues that we need to use our scientific training to change the politics, but that this cannot be done unless we create new types of institutions – intermediary organisations – that can 'stand between' the world of research and the world of politics, policies and everyday practices.

Ross had his first real success in evidence based practice with the wildly successful random breath testing program. This intervention has been shown to have reduced serious and fatal accidents from drink driving and has produced long lasting social change. He is currently involved in a program that looks at young people in socially disadvantaged communities, which has developed interactive measures of children's wellbeing using games on tablets and computers to engage and collect important health and wellbeing information from children.

You can view Ross' talk on <https://www.youtube.com/watch?v=1FqTHhZZ3gY>

**Lee Jones**

### Travel scholarship

The QLD branch would like to congratulate Marcela Cespedes, who was awarded a \$500 student travel grant towards attending ASC2016. Marcela is a UQ PhD student and is working on a project developing statistical methods which can identify patterns of neurodegeneration in the human brain in Alzheimer's disease.

**Lee Jones**



## Hauling in statistics

On October 11, 2016, the QLD branch held its monthly meeting where Bill Venables and Emma Lawrence from Data61 CSIRO gave an insightful talk on experimental design.

Bill Venables is an Honorary Research Fellow affiliated with CSIRO Data61 and Adjunct Professor at the University of Queensland. He was formerly a Senior Research Scientist with CSIRO and prior to that a Senior Lecturer at the University of Adelaide. Emma Lawrence is a statistician working in the Data61 group, focusing on statistical issues in fisheries management and marine monitoring. She has worked previously at the Australian Bureau of Agricultural and Resource Economics and Sciences.



October QLD branch meeting with Emma Lawrence and Bill Venables.



In a project involving trawling for prawns, Bill and Emma designed a masterful experiment which considered the complexities of life on the sea. The prawn catch is often only a very small fraction of the entire catch, with the remainder called “bycatch”. Reducing the bycatch component (whilst maintaining the prawn catch) is an important goal for the industry and the environment.

A trawling study trialling various bycatch reduction devices was conducted recently in the Gulf of Papua. The study involved 4 vessels towing quad gear (4 separate, but linked nets) over 18 days. The experiment was designed to assess the effectiveness of 27 combinations of Turtle Excluder Devices (TEDs) and Bycatch Reduction Devices, (BRDs), with a control net without any devices attached. Each vessel carried its own control net, which must be used on all trawls. There was only one copy made of each of the 27 treatment nets, however, this required the nets to be exchanged at sea. Such exchanges could only take place at specific times during the 18 day trial. These constraints made the design problem non-standard. Bill and Emma utilised design principles, statistical intuition and R to provide a solution in a complex and sometimes random environment.

**Lee Jones**

## SSA JOB BOARD

We are very excited to announce a new service to job seekers: **CV/Resume Critique!**

As a job seeker, registered on the SSA Job Board, you now have the option to request a free, confidential CV/resume evaluation from an expert and writer.

You can participate in this feature when uploading a CV/resume to our Society's Job Board through the CV/Resume Management section of your job seeker account. Within 48 hours of opt-in, an email will be sent to you outlining your strengths, weaknesses and suggestions to ensure you have the best chance of getting interviewed!

Your "Job Search Resource Centre" on the SSA website has everything you need to make your resume stand out, ace the interview, advance your statistical career and navigate the digital world through social media and digital communication.

To get started, please go to <http://careers.statsoc.org.au/jobseeker/resources/>



## AMSI Summer School 2017 PUBLIC LECTURE

**ASSISTANT PROFESSOR GENEVERA ALLEN**  
RICE UNIVERSITY

### NETWORKS FOR BIG BIOMEDICAL DATA

Cancer and neurological diseases are among the top five causes of death in Australia. The good news is new Big Data technologies may hold the key to understanding causes and possible cures for cancer as well as understanding the complexities of the human brain.

Join us on a voyage of discovery as we highlight how data science is transforming medical research: networks can be used to visualise and mine big biomedical data disrupting neurological diseases. Using real case studies see how cutting-edge data science is bringing us closer than ever before to major medical breakthroughs.

Register [ss.amsi.org.au/public-lecture-2017](http://ss.amsi.org.au/public-lecture-2017)

**TUESDAY, 31 JANUARY 2017 (6.30pm)**  
**@ Eastern Avenue Auditorium,**  
**The University of Sydney**

Sponsored by The University of Sydney's School of Mathematics and Statistics



## VIC BRANCH

### Belz Lecture 2016

Our 2016 Belz Lecture had a bigger turnout than ever. Distinguished Professor Louise Ryan (UTS) delivered the highly topical talk, But I'm a data scientist too, aren't I? We estimate around two hundred people showed up to the lecture, and 43 people joined us for the Belz Dinner. Students were well represented at the night, with a quarter of the dinner attendees comprising undergraduates and postgraduates. Given the close ties that our branch has developed with Data Science Melbourne, the Belz Lecture topic this year was particularly appropriate.

Louise shared with us some great insights into how statisticians can contribute more collaboratively to the broader data science discipline. Using practical examples from her own research, Louise demonstrated how statisticians have a unique skillset which complements and integrates well with other types of data scientists. In particular, her examples showed how statisticians can use their technical knowledge in conjunction with more computationally focused researchers to solve tricky data analysis problems. The talk generated a lot of interest and we received very positive feedback.

Early next year and immediately following the SSA Vic AGM, we have an exciting event planned that will see several speakers give talks on the topic of using mathematical modelling and statistics to address complex public health questions. SSA Vic council member Associate Professor Julie Simpson from ViCBiostat is arranging experts in the field for what should be insightful event.

Finally, SSA Vic is proudly supporting two early-career statisticians to present their work at ASC 2016. I will be attending and I hope to see many of you there!

**Charles Gray**





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## FROM THE OFFICE

I recently sent out a request for expressions of interest from members wanting to join the Organising Committee for the Young Statisticians Conference 2017. The QLD Branch kindly agreed to hold this event on their turf and you'll be pleased to read that for 2017 we are heading to the Gold Coast!

Once I sent out my email to find out if there was any interest from potential committee members, I wasn't exactly holding my breath to see if I would get any replies. It's a busy time of year and people are stressed enough with countless other commitments. However, I could not believe it when I checked the sign-up sheet the next day: 17 members had added their name to the list, willing to donate their time and energy to help get YSC2017 off the ground! In addition to that I received an email from one of our busiest members, also offering to help if we needed her.

Not only that, but some of the comments on the sign-up sheet were just lovely to read:

*"I will be glad to be a part of the organising committee."*

*"I attended ASC2014 and YSC2015. Also, I will be attending ASC2016. I would like to be a YSC2017 Committee member and actively participate in organising the conference."*

And, my favourite:

*"Have met amazing people and had nothing but memorable and informative experiences since joining SSAI. Would love to be involved and help out. "*

What wonderful feedback. How lucky are we at the Statistical Society to have members such as this dedicated group of young people? I can't wait to start working with them on this event.

Unfortunately I cannot yet give you the dates for the Young Statisticians Conference 2017, but you can already look forward to a great event. With the conference being held on the Gold Coast, we'll try to time it in such way that you can perhaps extend your stay and have a little holiday as well.

Something to look forward to for next year!

Thank you to the new YSC2017 Organising Committee, and to all the other volunteers and members of the Statistical Society, for another great year for SSA. You make my job the best in the world.

Have a wonderful end-of-year break and happy holidays!

**Marie-Louise Rankin**  
Executive Officer



## Would you like to contribute to the SSA newsletter?

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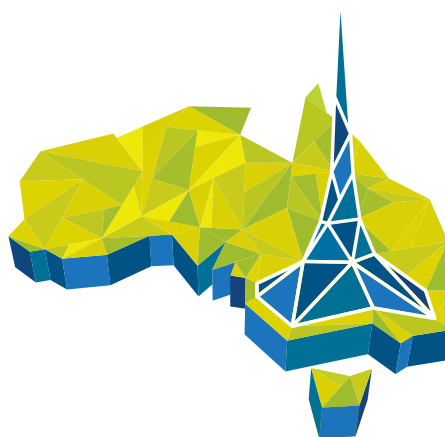
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# SAVE THE DATE

Joint International Society for Clinical Biostatistics and Australian Statistical Conference **26-30 August 2018**



# ISCB ASC18

26-30 AUGUST 2018  
MELBOURNE, AUSTRALIA



### Joint International Society for Clinical Biostatistics and Australian Statistical Conference 2018

On behalf of the International Society for Clinical Biostatistics (ISCB) and the Statistical Society of Australia (SSA), the Organising Committee invites you to Melbourne, Australia in August 2018 for the Joint International Society for Clinical Biostatistics and Australian Statistical Conference (ISCB ASC 2018).

HOSTED BY:  International Society for Clinical Biostatistics

 Statistical Society of Australia

MANAGED BY:  ISCB ASC 2018 Conference Managers: Arinex Pty Ltd  
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To receive updates,  
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