Australasian Region

Newsletter

Issue 13
August 2013

http://www.BiometricSociety.org.au

From the President's desk, David Baird

The six months since I wrote my first newsletter seem to have passed very quickly. I've just come back from Melbourne, where I spoke to the Victorian SSAI on my life as a statistical software developer. Looking back over 30 years, it was good to reflect on what I've learnt in the area of programming. I think all practicing statisticians today need to have good programming skills to be effective at their jobs, particularly when so many have moved to R, with very few menus in sight. One paradigm I hold, is that if you are repeating something regularly, you ought to automate it, and so I try and write programs and batch jobs to do that. I still use the old DOS command prompt with lots of abbreviated macros to do things quickly. I learn as many short-keys as possible, as I think the keyboard is more efficient than the mouse. I'm always surprised when I see people selecting Edit | Copy when a Ctrl+C would do, and people struggling to start a PowerPoint show with the menu when the F5 key is so much faster. In our profession, learning new skills is essential, be it keyboard shortcuts, programming languages/packages or new statistical techniques. Since the last newsletter, the organization of IBS-AR conference has been completed, and I sure the conference and two short-courses at the Mandurah hotel in December will continue to up skill our members, so they are more effective in their jobs. The list of invited talks are given by Mario (page 3) and I hope these appeal to you and that you will make the time to attend.

The newsletter reports on the four 2013 IBS-AR scholarship winners. It was great to have such a high quality of entries that we decided to award four scholarships this year. I've asked some previous winners to report on how the IBS scholarship has helped them, and was pleased to see the difference these have made in their lives. I think these scholarships are helpful for encouraging students into our profession and that it is very worthwhile use of our funds. One of the scholarship winners, Francis Hui, has also written a report on the Eco-Stats symposium.

Warren Müller's term on the IBS Representative Council has just finished, and I would like to thank him for all his hard work and wise advice over the last four years. Thankfully, he is going to carry on as the IBS-AR treasurer. We will be calling for nominations for his replacement on the council soon. We would also like members to nominate a member for the ALF awards to be presented at the conference.

Personally, I'm ready for a break after a busy last few months completing the 16th edition of GenStat (available now). I'm now taking 3½ weeks leave and will be visiting friends in Bangladesh, Jordan, England and Scotland, with stop overs in Turkey and Austria, before working in the UK for 3 weeks.

David.

Contents

Australasian Region - council

In 2013, the regional council comprises:

President: David Baird (VSN NZ)
Vice-president: Mario D'Antuono (Department of Agriculture and Food, WA)
Secretary: Patrick Graham (Independent Researcher)
Treasurer: Warren Müller (CSIRO)
Newsletter correspondent: Sally Galbraith (University of New South Wales)
Regional website manager: Hans Hockey (Biometrics Matters)
IBS Executive Board: Alan Welsh (Australian National University)
Kerrie Mengersen (Queensland University of Technology)
IBS Representative Council Members: David Baird (VSN NZ)
Ken Russell (Charles Sturt University) and one to be elected (see below).

Upcoming Conferences

International Biometrics conference

Members of the region may interested in the next International Biometric conference coming up: International Biometric Conference (IBC 2014) 6-11 July, 2014, Florence, Italy: www.ibs-italy.info

Australasian Epidemiological Association Conference

The 2013 conference of the Australasian Epidemiological Association will be held at the Brisbane Convention and Exhibition Centre in Queensland, from 20 to 22 October 2013. The conference theme, a "Life Course Approach to Health and Wellbeing", is concerned with investigating the role of biological, behavioural and psychosocial processes that link adult health and disease risk to physical and social exposures acting during life or across generations. The conference will provide an opportunity to discuss and exchange ideas and findings in this important and emerging field. Topics will include epidemiological methods, life stages, nutrition, physical activity and more. For further details, see www.AEA2013.com.

Joint Conference of the NZSA and ORSNZ, November 2013

The New Zealand Statistical Association and the Operations Research Society of New Zealand are holding a joint conference, hosted by the University of Waikato, in the week beginning 25 November 2013. Details will be posted on www.stats.org.nz.

Representative Council Nominations

With the completion of Warren Müller's term, the region needs a replacement for Warren on the Representative Council. Requests for nominations will be emailed to members shortly.

IBS-AR Conference 2013 Biometrics by the Canals in Mandurah, Western Australia 1-5 December

A reminder that registration and abstract submission is open for the next conference of the Australasian Region, nicknamed "Biometrics by the Canals". The conference will be held at *The Sebel Mandurah Hotel*, City of Mandurah (about 70 kilometres south of Perth), from 1-5 December 2013.

The conference website is now completed and you can now register at:

http://www.BiometricSociety.org.au/conferences/Mandurah2013

Abstract submission will close on Monday 2 September 2013.
Early-bird registration closes Monday 14 October 2013.

Themes for the conference will be: spatial and temporal statistics; linear mixed models; complex genetic mixed models; design of experiments; generalized linear and additive models; and Bayesian methods. The four-day conference, 2-5 December, will be preceded on Sunday, 1 December, by a one-day short course co-sponsored by NIASRA, University of Wollongong, 'Statistics for spatio-temporal data' given by Noel Cressie and a one-day workshop 'Vector generalized linear and additive models' given by Thomas Yee. Invited speakers are Ric Coe (Option x Context interaction and the design of multi-environment trials), Noel Cressie (Spatio-temporal smoothing of CO2 retrievals), Ian James (Host-viral interactions: Some statistical immunogenetic issues), Christine Müller (Prediction of growth processes), Alan Welsh (Information criteria for selecting linear mixed models) and Thomas Yee (Generalized Linear Models: Some thoughts and work 40 years on).

A special plenary session will showcase recent publications in the Biometrics and JABES journals by members from the Australasian Region. The invited speakers are David Fletcher (Model-Averaged Profile Likelihood Intervals), Geoff Jones (A Framework for the Joint Modeling of Longitudinal Diagnostic Outcome Data and Latent Infection Status), Tony Pettitt (Bayesian Experimental Design for Models with Intractable Likelihoods) and Ian Renner (Equivalence of MAXENT and Poisson Point Process Models for Species Distribution Modeling in Ecology) who will present a synopsis of their papers.

We invite you to join us soon.

Mario D'Antuono

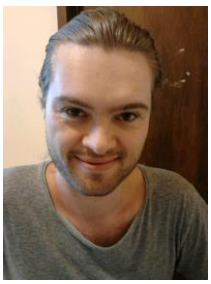
2013 Scholarships for Honours and Masters Students

The Australasian Region aims to attract enthusiastic and talented students to careers in biostatistics and biometrics by offering annual scholarships to honours (fourth year) or Masters level students of statistics, biostatistics, bioinformatics or biometrics. This year, out of a very strong field, we were delighted to be able to make awards to four worthy recipients: Claire Flynn, Daniel Ahfock, Daniel Tolhurst and Jonathan Ruffell.

Claire is studying towards a double degree at the University of Otago, New Zealand: a BSc (Hons) in Statistics, and a BA in Mathematics with a minor in Latin. She commenced honours in statistics this year, and for her thesis plans to investigate statistical methods for epidemiological studies of geographical variation in disease incidence. She has also worked as a summer student at AgResearch, where she designed a computer program to create optimal breeding programs for salmon.

Daniel Ahfock is an honours student at the University of Queensland, Australia. His honours project is focused on the application of statistics to plant breeding, in particular seeking to develop and implement statistical techniques for characterizing the accuracy of a genetic map. He has also completed two internships at the CSIRO in the area of statistical genetics.

Daniel Tolhurst is an honours student at the University of Wollongong, Australia, where he completed a Bachelor of Medical Mathematics. Prior to commencing honours he undertook vacation projects involving the application of statistics in the fields of health and biometrics. For his honours year he will study at the the newly formed National Institute for Applied Statistics Research Australia (NIASRA), in the field of biometrics.



Jonathan completed Bachelors and Masters degrees in biology before deciding to become a biostatistician, and is now studying for a Postgraduate Diploma in Statistics at the University of Auckland, New Zealand. He has previously worked as an ecologist and currently volunteers at the University of Auckland's Bioinformatics of Disease research group.

Congratulations and best wishes to all four students. I would also like to thank Chris Brien, Duncan Hedderley, and Sue Wilson for helping me with the judging.

Sally Galbraith.

Reports from past scholarship winners

Francis Hui (2011)

A lot has happened since I was lucky enough to receive an IBS-AR scholarship in 2011 to support my Honours in statistics. I am now a second year PhD student at UNSW, under the guise of David Warton (UNSW) and Scott Foster (Computational Informatics, CSIRO). Also, in contrast to my Honours thesis which was more equation-motivated, my PhD is heavily motivated from data presented to me by ecologists. In particular, my research is focused on using mixture-based approaches to modelling multi-species datasets in ecology. Of course, like Sheldon from The Big Bang Theory, I still stare at my whiteboard a lot of the time. Having a motivating dataset and application however helps me to step back and see the "bigger picture", and reminds me that my research will be used to help study and manage real ecological communities.

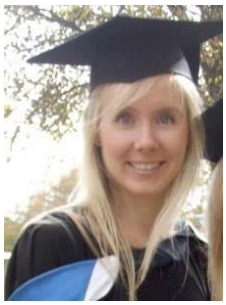
Part of this change from being equation-motivated to being data-motivated was due to the IBS scholarship I received. Of course financially speaking the money helped to pay for my tuition fees. More importantly though, the IBS scholarship was my first genuine link to a group of biostatisticians whom I greatly admire for their common ability to take real-world problems and datasets, and develop methods to analyse them. This connection was realised when I used some of the scholarship money to attend the IBS2011 conference in Kiama. Apart from David Warton collecting a dataset of blood alcohol readings from drunk IBS members, the other highlight was seeing how all the speakers took real-world problem as motivation to develop various new statistical methodologies. Looking back, I realise the impact that joining the IBS and receiving their scholarship has had on helping me become a researcher who is fundamentally data-motivated, and wants to collaborate with researchers in medicine and ecology whom have big datasets and big questions.

Megan Drysdale (2012)

Being recipient of the 2012 IBS scholarship gave me financial assistance in order to complete a PGDipAppStat with distinction. My honours project work involved a simulated exploration of the effect of varying sample size for application of an ordinal logistic regression model to dairy effluent discharge monitoring data. This work was a continuation of an analysis of dairy effluent discharge consent non-compliance, the results of which were fed back to industry to better inform them of the possible causes of poor performance and allow them to develop educational strategies intended to improve the rates of compliance with effluent discharge consents.

Subsequently I have been employed by the Department of Mathematics and Statistics at the University of Otago to co-present the introduction to statistics (STAT110) and the introduction to statistics in the biosciences (STAT115) papers. Additionally I have just had my PhD proposal on modelling over-dispersed data accepted and will commence my studies again at the beginning of 2014 if funding can be secured.

Lyndal Henden (2012)



I completed my BSc at Massey University in 2011 where I double majored in Mathematics and Statistics. Following this, I was awarded the 2012 IBS Honours Scholarship for my interest in statistical genetics.

My honours project was largely in the field of bioinformatics where I compared statistical methods for estimation of effective population sizes for small communities in Indonesia from Mitochondrial DNA. The results from this work were presented at both the 2012 Australian Statistical Conference in Adelaide and the 2012 NZSA conference in Dunedin.

Since the completion of my honours degree I have started a PhD at the Walter and Eliza Hall Institute of Medical Research in Melbourne. My project is again in the field of bioinformatics and aims to develop statistical methods that take advantage of the relatedness of individuals to identify inherited CNVs that are likely to cause disease.

Having had no biological or genetics background before my honours degree, I feel very privileged to have been the recipient of this award and am extremely grateful for the faith that the scholarship committee placed in me. The scholarship money helped fund my honours degree and I feel that the recognition from IBS contributed towards me being a successful applicant at Walter and Eliza Hall Institute.

Carol Wang (2012)

My experience as an honours student was a challenging and fruitful one. With the availability of scholarships and helpful professors to aid me in the learning process, I find myself in a positive and encouraging learning environment whilst studying in UWA. My honours project motivated and encouraged me to stay on in Australia to pursue a career in biostatistics.

Recently, I started working as a statistician with the School of Women's and Infants' Health at UWA. I would be working with the research team led by Craig Pennellon on the Raine Study doing genetics-related studies. I am also providing data analysis advice to researchers at the School of Population Health at UWA as a free-lance statistician.

Nominations for the ALF Awards

Each IBS-AR conference up to two awards are given to members for life contributions to biometrics and the society. There is also a requirement for longstanding membership of the society. Further details can be found at http://www.biometricsociety.org.au/alf.html. If members want to nominate someone for this award, they should contact the secretary, Patrick Graham (patrick.graham.br@gmail.com), and ask for the nomination form to be emailed to them.

Report on the Eco-Stats Symposium

The first ever Eco-Stats symposium was recently held on July 11-12, 2013, at the University of New South Wales, Australia. With a sample size of 142 ecologists and statisticians from nine countries in attendance, the event was a sensational success. There were five sessions in total, organized around some current "hot topics" including analysis of presence-only data, maximum entropy modelling, analysis of multivariate data, mapping bioclimatic variables, and functional and phylogenetic diversity. Something I particularly loved was the structure of each session: two superstars, one specializing in ecology and the other in statistics, each gave their views and opinions on the hot topic at hand. Some of these superstars included Professors Trevor Hastie, Noel Cressie and Shirley Pledger. Fortunately, none of the sessions turned into a boxing match! In fact, the dual setup gave me (and I'm sure everyone else attending) a better insight into the common and differing challenges and concerns facing ecology and statistics. One of these (and a personal highlight of mine) was Gerry Quinn's talk about how distance and ordination methods can lead one badly astray. I also enjoyed Noel Cressie's talk on how to model uncertainty in bioclimatic mapping, with his awesome mini movies of projected temperature changes in North America.

Day 1 ended in style with a public forum entitled "Can Maths Save the Planet?", chaired by Mark Horstman from ABC's Catalyst program. You can now watch the entire forum on at http://www.youtube.com/watch?v=MBDU9SbJybo

On day 2, after all five sessions were concluded, we took our boxed lunches (bringing back memories of primary school) to one of five breakout sessions, one for each of the special topics. These breakout session gave everyone a chance to delve deeper into the session topics. I went to the session on multivariate analysis, and got to understand some of the ecologists' concerns about what to do with rare species – whether to throw them out or focus on them more, trying to work out the "type of rarity", and the all-important question of how to analyze them. Although we didn't come with up with any specific breakthroughs, it was great for me to see the bigger picture, and know that my research was something ecologists would be keen on using in real-life, "this could save the planet" applications. In fact, the clear message from all the breakout sessions was that there needs to be much more communication and collaboration between statisticians and ecologists, at every point in the research process. As the symposium drew a close and we all headed off to the pub, it was clear that symposiums such as this one were a key step in building these cross-discipline collaborations. So look out for Eco-stats 2015!

Francis Hui (School of Mathematics and Statistics, UNSW, and Computational Informatics, CSIRO)

Prof. Gerry Quinn and why we should beware the "use the default" option on our statistical programs

Prof. Kerrie Mengersen and Mark Horstman busy using maths to save the planet

Feedback

This newsletter was written by David Baird with contributions from various members. Thank you to all for your support. All comments and suggestion are most welcome. Please forward any feedback on the newsletter to David Baird.