The Statistical Society of Australia
News

SSAI

In this issue

AUSTRALIAN STATISTICAL CONFERENCE 2012

The Australian Statistical Conference and associated OZCOTS conference were held in Adelaide in July 2012. Both conferences were well received by those who attended. On behalf of the organising committee I would like to thank all SSAI members who attended the conference or contributed to its success in some way. The support from members is enormously valuable to making the Australian Statistical Conference a centrepiece of SSAI activities.

A total of 311 delegates attended the conference, of which 257 were from Australia and 18 from New Zealand. The conference also hosted a number of international statisticians, with delegates coming from 15 different countries. It was especially pleasing to have an increased number of young statistician delegates, many of whom gave talks.

The program had six highly regarded keynote speakers and a number of invited speakers and special invited sessions. The strong program of contributed talks, which were diverse in content and delivery style, also led to an impressive mixture of presentations.

The organising committee chose the Adelaide Convention Centre because it offered a space that was conducive to networking and catching up with colleagues and friends. The social program provided more opportunities for delegates to relax and meet new people.

Planning is underway for the next conference. Co-chairs Richard Gerlach and Geoff Lee and their organising committee look forward to seeing us all in Sydney in 2014.

Paul Sutcliffe

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Paul Sutcliffe

September 2012
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DEADLINE FOR NEXT NEWSLETTER
10 November 2012

EDITORIAL

Many of you will be back at work now after attending the Society's 50th anniversary conference in Adelaide. This issue contains reports and photos from that event, and we hope that you all found the conference to be stimulating, useful and relaxing at different times.

Many of you have probably also spent some (or maybe a lot!) of time watching Olympic competition on the TV over the last few weeks. What a fantastic opportunity this event gives to promote the wise use of statistics. The debates about who "won" the Olympics in terms of medal counts are unlikely to ever be concluded. However, as members of the Statistical Society we are uniquely placed to comment on how there is not necessarily one answer to a quantitative question, and how the answer can vary depending on the way you define the question, and the assumptions you make. We hope you've been able to make positive use of Olympic conversations you've had to promote your profession's contribution to sport.

It's also Science Week as we write this, and on behalf of the Society I'd like to thank all those Society members who gave their time to speak at schools or in other forums about the science of statistics. So much of the world depends on data and the proper interpretation of data, that statistics deserves a central place in Science Week. If you came up with a Science Week presentation that had all the whizz-bang of a chemical explosion and also imparted a really strong take-home message about what Statistics can do for society, do tell us all about it!

Finally, new officers were elected to many Branches and Sections in the last few months. We'd like to take this opportunity to thank all those who have served on committees for the last few years. We'd also like to welcome all new and returning committee members and office bearers. We look forward to your contributions to the Society through this Newsletter!

To help guide your debate on the Olympic winners, a New Zealand based member sent the following link http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/olympics.aspx

If you have other useful links, write and let us know!

Alice Richardson

and **Michael Adena**

A SPECIAL HONOUR FOR KEN BREWER

Ken Brewer's 80th birthday was celebrated by his Australian colleagues at a day symposium in Canberra in March 2011, and by the wider circle of his collaborators in a special issue of the Pakistan Journal of Statistics on the initiative of its Chief Editor Professor M. Hanif Mian. The issue appeared late in 2011, its 14 articles reflecting facets of survey sampling and inference where Ken had made pioneering contributions – indeed its authors' associations with Ken spanning almost the whole 50 years of his published career, a tribute to their longevity and their respect for his work. The suggestion to include a handover ceremony as part of the ASC was put to Professor Hanif. Fortunately the conference overlapped with a family visit so Hanif could combine the handover and his anticipated catch-up with Ken, but in Adelaide rather than Canberra.

During the handover ceremony Hanif spoke of his long association with Ken. They first met in 1968 when Ken was working as the Director of the Sampling and Methodology Division of the Australian Bureau of Statistics (or rather the Commonwealth Bureau of Census and Statistics as it was known then). Hanif was a graduate student at the University of New South Wales in Sydney and had received permission from the University to work with Ken Brewer in Canberra.

During his time with the Bureau in Canberra Hanif not only completed his doctoral studies, but with Ken Foreman and Ken Brewer developed the ABS' multi-stage household sample. His fortuitous presence at the 50th anniversary conference provides a salient reminder of the long history of survey sampling in the country and the active role of official statisticians in the society, Ken Brewer as a former president included. After the presentation, Ken spoke briefly to introduce the annual Foreman lecture with an anecdote from those days.

Stephen Horn

Hanif Mian, Ken Brewer and Stephen Horn

Ken Brewer's introduction before the 2012 Foreman Lecture

Good morning Ladies and Gentlemen!

I have been asked by the Conference Organisers to provide an introduction to the Foreman Lecture by speaking for five minutes about Ken Foreman himself.

*Following several attempts to provide something meaningful in the way of such an introduction in just five minutes, I decided that I should write something longer about him as well, and mercifully the Organisers agreed. You will therefore already have such a printed document, or be in the way of receiving one very soon. **

However it soon occurred to me that I had forgotten to mention a certain anecdote about Ken that (while it did not provide a fully rounded picture of that remarkably complex individual) would probably give you a reason to want to learn more about him.

This anecdote is dateable to the early or mid-1960s, after the completion of his work on the Survey of Indigenous Agriculture in Papua New Guinea (still at that time an Australian Territory) but before his involvement in its 1966 Population Census, these being two of his signal achievements. This was also the time at which Ken had to give up travelling long distances by air, on account of his war wounds, and I had started to deputise for him.

The most important finding of the Survey of Indigenous Agriculture itself had been to demonstrate that Papua New Guineans were, on the whole, quite well fed. Serious hunger, if it existed at all, was confined to relatively small pockets. The Territory Administration knew well that such small pockets, if they existed at all, could only be found in the (then) sub-districts of Chimbu, Wabag and Maprik.

In order to determine where they were (if they existed at all) the Territory's Department of Agriculture and Fisheries requested an "intensive survey" of these three sub-districts to be conducted, and Ken agreed. Within a matter of two or three months we had our answers. Chimbu and Wabag had no problem, but in Maprik there was a small area where the problem was severe.

What had happened was this. When the Administration resumed control of the Maprik area (I imagine in late 1945) it found that a lot of internecine fighting had been going on between villages; typically with the victors taking considerable areas of land from the vanquished. The Administration quickly put a stop to this by freezing the existing boundaries and forbidding any further efforts to change the status quo.

Unfortunately, however, this had happened just after one group had scored an overwhelming victory, so that the vanquished group was left permanently short of arable land. However once this supplementary survey had detected exactly where the problem was located, the Administration was able to negotiate a fairer alignment of boundaries.

It is fitting, I think, to suggest that without Ken Foreman's readiness to assist in this circumstance, and Keith Archer's preparedness to allow him to do so, certainly hundreds (and possibly thousands) of unfortunate villagers, would have gone on being hungry for years, and possibly decades.

Ken Brewer

*Editor's note: The document that Ken was referring to is not yet available.

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Further contact details for Society Secretaries and Section Chairs can be obtained by contacting the Society on (02) 6251 3647

EVENTS

STATISTICAL META-ANALYSIS: METHODS AND APPLICATIONS

A short course with Professor Bimal Sinha
13-14 October 2012, Adelaide

SYMPOSIUM ON ANALYSIS OF LONGITUDINAL DATA

Various Presenters
16 October 2012, Canberra

Bayes on the Beach
6-8 November 2012, Sunshine Coast

AUSTRALASIAN APPLIED STATISTICS CONFERENCE (GENSTAT AND ASREML)

(Formerly known as the Australasian GenStat Conference)
4-7 December 2012, Queenstown, New Zealand.

STATISTICS IN PLANNING AND DEVELOPMENT: BANGLADESH PERSPECTIVE

27-29 December 2012, Dhaka, Bangladesh
For more information please contact arsikderbbs@yahoo.com

YOUNG STATISTICIANS CONFERENCE 2013

7-8 February 2013, Melbourne

NATSTATS 2013

12-14 March 2013, Brisbane

12TH NATIONAL RURAL HEALTH CONFERENCE

7-10 April 2013, Adelaide

THE 59TH WORLD STATISTICS CONGRESS

25-30 August 2013, Hong Kong, China

ASC 2014

7-10 July 2014, Sydney

SSAI CENTRAL COUNCIL

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AUSTRALIAN STATISTICAL CONFERENCE 2012

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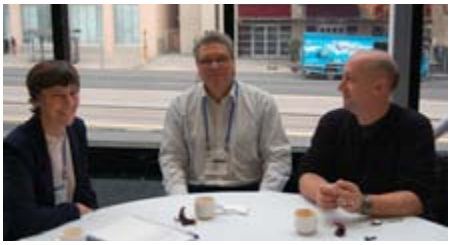
Australian Statistical Conference 2012 Summary

There were 130 responses to the evaluation questionnaire. These results and the associated comments will provide valuable information for the next conference committee.

	Very unsatisfactory	Unsatisfactory	Satisfactory	Good	Excellent	N/A
Venue	1%	1%	5%	28%	65%	
Welcome Reception		3%	13%	41%	23%	19%
Conference website		2%	24%	6%	12%	6%
Conference Dinner		5%	5%	24%	22%	49%
Keynote speakers			5%	35%	60%	
Contributed sessions		2%	13%	69%	13%	3%
Audio-visual		2%	3%	27%	40%	29%
Conference rooms	1%		6%	51%	41%	
Catering		2%	13%	47%	38%	
ASC2012 overall			3%	48%	49%	



Photographs Courtesy of CSIRO

PRESIDENT'S COLUMN

Hello members

What a fantastic time we are having in the Society! There are so many things happening. I do hope that you are finding the opportunity and time to participate. As always, if you would like to comment on these activities, suggest other opportunities for the Society to respond to member needs and interests, or discuss Society issues in general, please feel free to contact me or the Executive Officer, Marie-Louise. Of course, we would also like to hear positive stories and feedback from you as well!

My first set of accolades must go to the many organisers of ASC2012. What a fantastic conference! It was well attended, very well organised, stimulating in terms of content and rich in social interaction. It was a great celebration of the Society's 50th birthday and its 21st ASC. On behalf of the Society, thank you to all involved in its success, especially Paul Sutcliffe who put in a huge effort.

ASC also saw the announcement of prizes and awards. Congratulations to Alan Welsh for winning the Society's highest award, the Pitman Medal. The citation for Alan will appear in the Society's journal, the Australian and New Zealand Journal of Statistics; a photo of the presentation appears elsewhere in this Newsletter. Service Awards were also announced for William Dunsmuir and Brian Phillips, 'in recognition of sustained and significant service to the Society'. The 2012 EJG Pitman Prize for 'the most outstanding talk presented by a young statistician at an Australian Statistical Conference' was awarded to Garth Tarr; this was an outstanding achievement given the very high standard of presentations from the many young statisticians who attended the conference. Congratulations to all of you! Indeed, the large number of young statisticians who attended the conference was remarked on by many and is a strong sign of the health of the Society.

Alan Welsh, with Kerrie Mengersen, being awarded the Pitman Medal, in recognition of outstanding achievement in, and contribution to, the discipline of Statistics.

Which brings us to three Young Statisticians issues. First, at the Conference we announced a new SSSAI Travel Award. Details of the SSAI Golden Jubilee Travel Grant, which will provide overseas travel funds to SSAI student members, are provided elsewhere in this Newsletter and on the Society's website.

Second, we also held the first Meet Market at ASC. This was an opportunity for potential employees to connect with potential employers. This has been extended to a blog on the SSAI website: http://statisticalsocietyaustralia.wordpress.com/2012/08/07/job-opportunities-for-statisticians/ Please feel free to join the discussion if you would like to participate.

Third, we are looking forward to next year's Young Statisticians Conference (YSC2013) in February in Melbourne. These meetings have been very successful, friendly and interesting, and I urge all (eligible) members to attend – see the website http://www.statsoc.org.au/ysc.htm for more information. Thanks to the organisers of this event – it is always a huge effort to create a conference and this is a key event for the Society, so your efforts are greatly appreciated.

Our next ASC will be in 2014, in Sydney. This will be a joint meeting with the Institute of Mathematical Statistics, which is a great opportunity for our Society. It should be double the intellectual and social fun of ASC2012! More information will be available on the SSAI website soon.

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Speaking of the website, we are in the process of an upgrade but in the interim we are actively adding information to the web pages, so please browse it regularly to keep up to date with what's on. Examples include the activities of the Branches and Sections, short courses and workshops, webinars, our membership drive, professional accreditation and professional indemnity insurance. Minutes of the meeting of the Central Council that took place at ASC2012 will also be available shortly. As always, input from all members is welcome. Please contact our Executive Officer (eo@statsoc.org.au) if you have any comment or contribution.

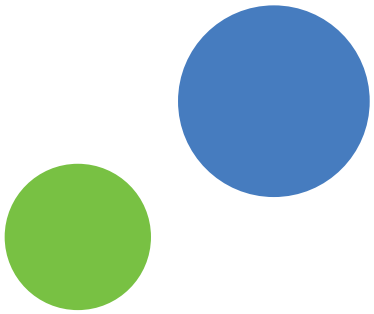
In addition to presentation of SSAI Central, Branch and Section reports, the Central Council welcomed the new set of Branch executives, Section Chairs and Assistant Chairs, and the Central (Council?) Committee. Thank you to all those who have stepped up to these positions – the Society is built on these efforts.

Three other activities that will occupy our time for the remainder of this year are as follows. First, we are aiming to finalise the SSAI Central, Branch and Financial Strategic Plans. This has been discussed in previous Newsletters and was progressed at ASC2012. Second, to celebrate our 50th birthday, we are compiling a history of SSAI. If you have any information that you would like to contribute – dates or details of events, stories of people or relevant activities within or outside the Society, etc – we would love to hear from you! Third, we are planning our participation in two international events in 2013: Mathematics of Planet Earth (http://www.statsoc.org.au/MPE) and the International Year of Statistics (http://www.statsoc.org.au/?pageid=2831). The Society is currently cataloguing activities in Australasia that relate to each of these events, so if you know of anything, please let us know via eo@statsoc.org.au. We are also seeking members who would like to play a more active role in these events, for example in liaising with other groups within and outside Australia. If you are interested, please let us know.

Finally, I invite members to share, read and comment on broader activities that relate to our profession. Examples include the recent Chief Scientist's Occasional Paper on Australia's position in the world of science, technology and innovation, and his influential Report on Mathematics, Science and Engineering (see the Chief Scientist's website), and the new combined school curriculum in Mathematics. If you have other issues or links that would like to share with members, please let us know.

Kind regards

Kerrie



YOUNG STATISTICIANS' CONFERENCE

Statistical conference. What comes to mind? Recent comments I've heard have included: "I felt like a kid in a candy store" and "I love attending them because everyone is so intelligent". Now consider the word "Young". I think of the next generation. Passionate. Creative. Uninhibited.

In conjunction with Young Statisticians Conference 2013, we invite all early-career statisticians to embrace their innate intelligence and creativity by entering either the YSC2013 video competition, the YSC2013 infographic competition, or both!

The aim of the video competition is to produce a 3-5 minute video explaining a practical statistical concept used in our world in a manner appropriate to a non-statistical audience. For instance, it could be in earthquake prediction, internet search engines, the ranking of schools, how health care has benefitted from statistics, the stock market or chances of winning a football game.

The aim of the infographic competition is to produce an electronic infograph describing a dataset to engage and enlighten a non-statistical audience. This could be data you use in your research, or a publicly available dataset.

Both competitions tie into the International Year of Statistics and Mathematics of Planet Earth, and entries meeting the judging criteria will be considered for first and second prizes of $500 and $250, respectively.

For more details please visit ysc2013.com.

Susanna Cramb

Photo: © All rights reserved by mayyazmahmood

THE INTERNATIONAL YEAR OF STATISTICS (STATISTICS2013)

The International Year of Statistics ("Statistics2013") is a worldwide celebration and recognition of the contributions of statistical science. Through the combined energies of organizations worldwide, Statistics2013 will promote the importance of Statistics to the broader scientific community, business and government data users, the media, policy makers, employers, students, and the general public.

The goals of Statistics2013 include:

- increasing public awareness of the power and impact of Statistics on all aspects of society;
- nurturing Statistics as a profession, especially among young people; and
- promoting creativity and development in the sciences of Probability and Statistics

Activities acknowledging the International Year of Statistics

October 17-18, 2012 - "Statistics and Its Applications"
National University of Uzbekistan (NUUz), Dept. of Probability Theory & Mathematical Statistics

January 1-9, 2013 - Workshop and Conference on Limit Theorems in Probability
Virtual Institute for Mathematical and Statistical Sciences, Bangalore, India

January 2-5, 2013 - International Indian Statistical Association meeting, India

January 6-10, 2013 - ISBA Regional Meeting and International Workshop/ Conference on Bayesian Theory and Applications
Banaras Hindu University, India

February 7-8, 2013 - 5th Biennial Statistical Society of Australia Young Statisticians Conference
Trinity College, University of Melbourne

February 21-23, 2013 - ASA Conference on Statistical Practice
New Orleans, LA, USA

February 22-23, 2013 - 2013 Spring Undergraduate workshop
SAMSI, Research Triangle Park, NC, USA

March 10-13, 2013 - ENAR Spring Meeting
Orlando, FL USA

March 12-14, 2013 - NatStats 2013 Conference
Brisbane Convention & Exhibition Centre, Australia

March 14-15, 2013 - Tunisian Association of Statistics and its Applications
Fourth meeting on Statistics and Data Mining (MSDM 2013), Hammamet, Tunisia

April 22-25, 2013 - Eastern Mediterranean Region-IBS Conference
Tel Aviv, Israel

May 10-11, 2013 - R Workshop on Bioinformatics and Statistical Computing
Milwaukee, WI, USA

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May 13-17, 2013 - Undergraduate Modeling workshop
SAMSI, Research Triangle Park, NC, USA

May 26-29, 2013 - 41th Annual Meeting of the Statistical Society of Canada
Edmonton, Alberta, Canada.

June 5-7, 2013 - 2013 International Conference on Statistics and its Interactions with Other Disciplines(SIOD 2013)
HoChiMinh City, Vietnam

July 1-4, 2013 - The 8th International conference on Mathematical Methods in Reliability (MMR2013) - Theory, Methods & Applications
Stellenbosch, South Africa

July 15-23, 2013 - Industrial Mathematical and Statistical Modeling Workshop for graduate students (IMSM)
SAMSI, Research Triangle Park, NC, USA

July 19-25, 2013 - International Conference on Machine Learning and Data Mining
New York, NY USA

July 20-25, 2013 - 29th European Meeting of Statisticians
Budapest, Hungary

July 29-August 2, 2013 - 36th Conference on Stochastic Processes and their Applications
Boulder, Colorado, USA

August 3-8, 2013 - Joint Statistical Meetings
Montréal, Quebec, Canada

August 25-30, 2013 - World Statistics Congress of the International Statistical Institute
Hong Kong, S.A.R. China

September 18-20, 2013 - ENBIS - 13, the 13th Annual Conference of the European Network for Business and Industrial Statistics
Ankara, Turkey

September 22-25, 2013 - 10th Applied Statistics International Conference
Ribno(Bled), Slovenia

October 15-16, 2013 - International Conference Ars Conjectandi 1713-2013
Basel, Switzerland

October 16-18, 2013 - Swiss Statistics Meeting
Basel, Switzerland

October 17-18, 2013 - "Statistics and Its Applications"
National University of Uzbekistan (NUUz), Dept. of Probability Theory & Mathematical Statistics

December 20-23, 2013 - ICSA International Conference
Hong Kong Baptist University

December 28-31, 2013 - Statistics 2013: Socio-Economic and Sustainable Challenges and Solutions
CRRAO AIMSCS, Hyderabad

OVERSEAS STATISTICIANS VISITING AUSTRALIA

We have an "Overseas Visitors" page on the SSAI website (http://www.statsoc.org.au/OverseasVisitors). The aim of this page is to provide a public database with the names of overseas visitors, giving other organisations the opportunity to benefit from the visit as well. If you or your organisation think that they would like to work with one of the visitors listed on the website, simply send an email to the SSAI office, explaining the details of your proposal, and the office will forward your email to the visitor in question.

If you know of statistical experts from overseas planning a visit to your organisation, please advise the SSAI by sending an email containing the name, details and travel dates of the visitor to eo@statsoc.org.au. We would also need the visitor's email address (not to be published on the website), so that we can ask for his or her permission to put their name up, as well as the name and details of a contact person in Australia.

PROFESSIONAL INDEMNITY INSURANCE FOR SSAI MEMBERS

Professional Indemnity Insurance for members of SSAI is now available. Insurance Advisernet Australia Pty Ltd (IAA) have brokered an exclusive arrangement with Chubb Insurance Australia Ltd, who are a market leader in specialty insurance coverages, which are uniquely designed for specific industries. IAA currently administer a successful Professional Indemnity Insurance facility for Mortgage Brokers and Financial Advisers. This Facility is also underwritten by Chubb. If your current insurance policy is about to expire or if you have to take out insurance for the first time, please contact the SSAI office by email (eo@statsoc.org.au) or telephone (02 6251 3647).

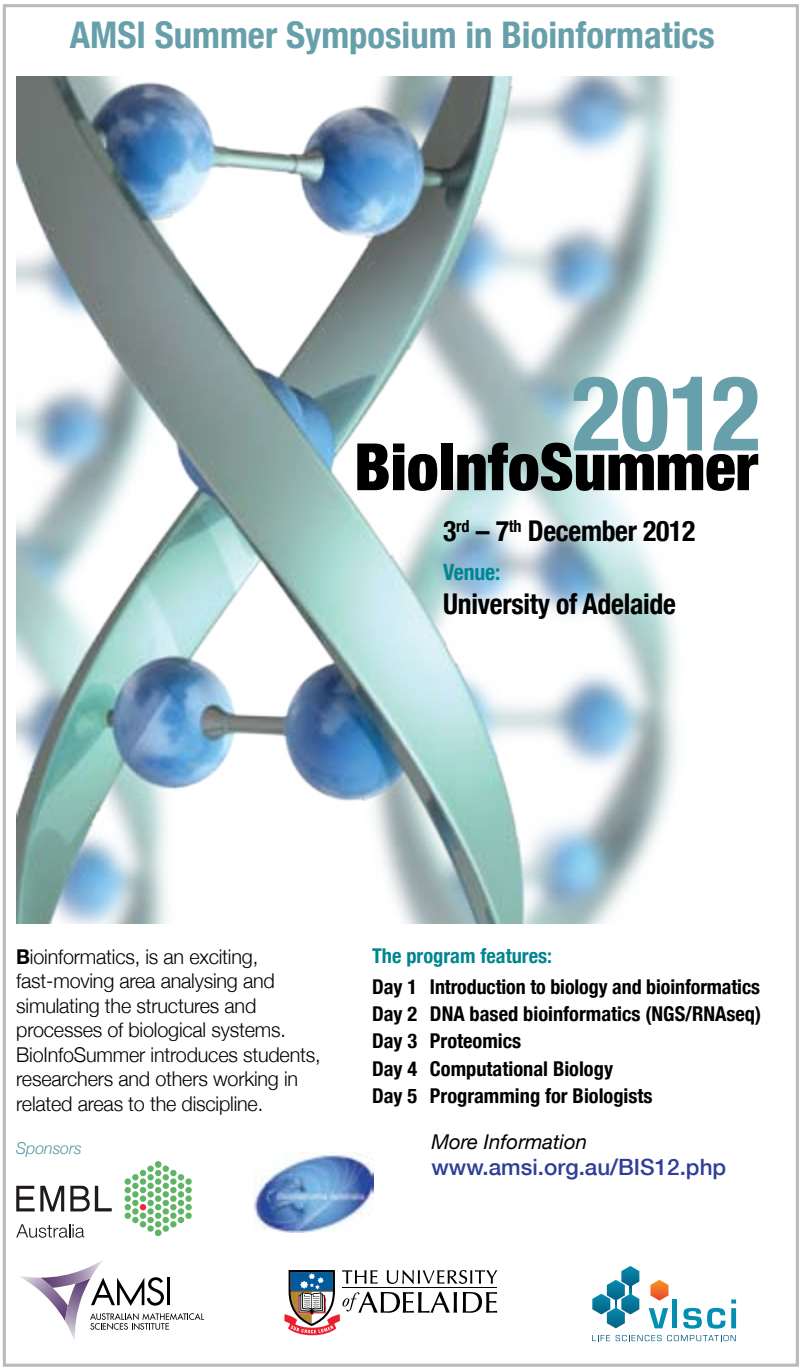
LOOKING FOR A JOB?

For a listing of current statistical vacancies in Australia and New Zealand visit:

http://www.statsci.org/jobs

Do you have a job to advertise on the website?

Email a position description to eo@statsoc.org.au. Listing is free!



WEBINAR WITH DR BRONWYN HARCH

On Friday, 7 September 2012, SSAI members were treated to a Lunch and Learn webinar with Dr Bronwyn Harch, Deputy Director, Agri-Environment & Government Partnerships, CSIRO Sustainable Agriculture Flagship. Bronwyn's topic was "Global Food Security: Achieving food security in the face of climate change", and she explained the role that statisticians and statistical science play in preventing the human population from going hungry by 2050.

Bronwyn pointed out that some of the key challenges to this aim include a world population that will have risen to over 9 billion over the next forty years, converging threats from climate change, unsustainable resource use, resource competition, land degradation, greenhouse gas emissions, food price volatility and conflicts associated with food shortages. With these challenges comes an "eco-efficiency" imperative for global agriculture – producing more food and fibre with more efficient use of natural resources with less impact on the environment.

In her presentation, Bronwyn referred to the Final Report issued by the Commission on Sustainable Agriculture and Climate Change, who reviewed scientific evidence to identify a pathway to achieving food security in the context of climate change. To ensure that all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs, the Commission recommends that food security and sustainable agriculture be integrated into global and national policies. It further recommends to significantly raise the level of global investment in sustainable agriculture food systems in the next decade and to target populations and sectors most vulnerable to climate change and food insecurity. Other recommendations include reshaping food access and consumption patterns to ensure basic nutritional needs are met and foster sustainable eating habits worldwide.

The Commission's report with all its recommendations can be accessed here: Final Report from the Commission on Sustainable Agriculture and Climate Change.

Marie-Louise Rankin

Warmest congratulations to Dr Bronwyn Harch, who has been appointed Chief of the CSIRO Division of Mathematics, Informatics and Statistics (CMIS). She will take up her new position on 8 October 2012.

FROM THE SSAI OFFICE

Marie-Louise Rankin

It seems that I only sent off the June newsletter material to our designer Lisa Tilse last week, but here we are already, preparing the September issue.

Following the success of our first webinar with Hugh Possingham, who talked about "Optimal monitoring for applied ecology – why classical stats has failed" I am now busy finalising arrangements with other presenters in our illustrious line-up. As I am writing this we are looking forward to our first webinar using the teleconference and webinar provider Citrix- GoToMeeting. It will be presented by Ben Farrell of the Canberra UNHCR office and his topic , "Global Trends, Local Interpretations: Statistics & the Asylum Debate" couldn't come at a more opportune time. Only a week later we will have the pleasure of hearing Bronwyn Harch, Deputy Director, Agri-Environment & Government Partnerships, CSIRO Sustainable Agriculture Flagship, addressing the issue of "Global Food Security".

Researching different companies that offer webinar facilities, I recently rediscovered Citrix – GoToMeeting. I had worked with Citrix before as a webinar participant, not as a host. SSAI signed up with Citrix, because it offers better webinar facilities than the previous company we were with – at a better rate! We should now be able to not only record our webinars, but make them available on our website as well. Previously I was able to record the webinar, but the file was so large that I wasn't able to do anything with it. Citrix allows participants to use the microphone and speakers of their computers, rather than having to dial in by telephone. Those who still want to use their telephone can do that as well. I am looking forward to receiving your feedback regarding Citrix.

In July I had the pleasure of meeting many of our members at ASC2012. Thank you to all those of you who dropped by the SSAI stand to introduce yourselves. It makes such a difference to be able to put a face to a name.

Only two weeks after ASC 2012 I attended the Annual Associations Forum Conference in Brisbane. Just like there is a conference for statisticians there is one for people who work for associations and the Associations Forum event is it. I found it very interesting to learn what other associations are up to and attending this conference helped me get a fresh perspective on many issues that SSAI faces. In fact, I intend to organise a meeting for the branch membership officers shortly to share with them the key facts of what I learned at the conference. I had the opportunity to speak with exhibitors who offer services to associations such as conference facilities, internet services and administrative support. I was able to personally hand over several copies of the design brief for our new website and I have started discussions with some of the website companies who have already responded. Talking with their representatives I quickly realised that as an association with "only" 700 members we are small fry indeed and a glossy, highly functional website is probably out of reach for SSAI. Still, I am working on finding a person or a company who can deliver what we need within a reasonable budget. One of the main benefits of attending this conference was the exchange with people in positions similar to mine. It was great discussing membership drives, renewals, accreditation processes, etc. with people who handle this kind of work on a daily basis. However, towards the end I was getting a bit deflated after hearing comments such as "Get your IT person to do this," or "Get your membership officer to do that" and "Your admin officer should be able to…". Here at SSAI I am all of these people rolled into one, and when I don't know something, I don't have an IT person, a membership officer or another admin

person that I can ask. I quickly came to the realisation, though, that there is always someone within the membership that I can approach with respective questions, and for that I am very grateful.

For those of you who don't know this yet: at the SSAI office we have a wonderful new colleague, Sonia Cowdroy, who helps out on Mondays. Sonia has been in contact with some of the Branch Executive, sending out Branch and Section membership lists. Any email sent from the email address mo@statsoc.org.au is from Sonia. If you send a reply to that email address, it will take until the following Monday before you'll receive a response, because no one checks that email address when Sonia isn't there. Also, Sonia does not work during the ACT school holidays.

One last thing before I close: would you please note that the SSAI office will be unattended from 4-22 October 2012? And when I get back from my leave, it's almost time again to get ready for the December issue!

Marie-Louise Rankin

CAMBRIDGE UNIVERSITY PRESS

20% SSAI MEMBER DISCOUNT PROMOTION

Cambridge University Press Australia is pleased to offer an exclusive 20% SSAI member discount off selected statistics titles. Please go to http://www.cambridge.org/aus/catalogue/promotion.asp?nav=view&code=STATS11 to see the available titles.

To apply the discount, simply enter the promotion code STATS11 when prompted at the checkout stage of your order, and the prices will be automatically updated.

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Wiley-Blackwell is pleased to offer members of the Statistical Society of Australia Inc a 25% discount on a wide range of books published by John Wiley & Sons. The range of books on offer includes titles from Wiley-Blackwell's extensive list of statistical publications, as well as titles from our brands Frommers, Capstone, Dummies, Jossey-Bass and many more.

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SSAI GOLDEN JUBILEE TRAVEL GRANT

to provide overseas travel funds to SSAI student members, who can prove consecutive SSAI membership for a minimum of two years.

To help celebrate SSAI's 50th anniversary, the SSAI has introduced a travel grant that offers limited travel funds to assist student members of the SSAI 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.

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 SSAI newsletter. This report should confirm the actual travel details and papers presented.

Recipients of the grant are asked to acknowledge the SSAI'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.

With this travel grant program the SSAI 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 SSAI is willing to support student statisticians and their budding careers.

MEMBER NEWS

Some time after I had become a statistician my father casually asked me "R.A. Fisher was a good statistician wasn't he?". To which I replied "He certainly was." Then my father said "Well, you've met him.", which was a surprise for me. From time to time Dad and I have talked about his experiences with Fisher and how I met him at the University of Adelaide. Since R.A. Fisher died in Adelaide a little over 50 years ago I asked my Dad to document what he has told me. I hope you will find it as interesting as I did.

Richard Penny
Statistics New Zealand

A Reminiscence of R. A. Fisher

In May 1959, I joined the CSIRO Division of Mathematical Statistics, in the University of Adelaide. A few weeks later, there was another new arrival: Sir Ronald Aylmer Fisher. Fisher had retired as Galton Professor of Genetics at Cambridge University, and been invited to Adelaide by Dr E A Cornish, Chief of the Division. Fisher remained there until he died in 1962.

While I had taken statistical papers as part of a mathematics degree, I had been hired as part of CSIRO's plans to install computers. In our small Adelaide group, I was probably then the only person who had written a computer program. The fact that I had no great pretensions to be a statistician was quite helpful in my dealings with Fisher. He could be impatient with aspiring young statisticians who were slow to understand him, and even quite waspish at times.

Fisher liked at times to come for a chat at morning and afternoon tea. Again, since our place was small, there would occasionally be just the two of us. My encounters with Fisher gave me some insight into the attributes which lay behind his remarkable achievements.

At the time, I was taking graduate-level courses in the Mathematics Department. Fisher asked what I was doing, and offered to help if I had a sticky problem. So a week or two later I took to him a problem in Celestial Dynamics. The topic was one I felt very confident in - I would not have approached him otherwise - and Fisher may never have thought about the field. But I remember to this day the speed with which he demolished my problem. Where I would write three steps, he would use one.

I remember too how happily he took on my little problem. Now, if Fisher is mentioned in chats with statisticians, I can casually remark: "Yes, he helped me with my homework." An exaggeration, but certainly true.

In another tea-time conversation, Fisher said that he could see the value of computers for generating tables. On leaving, he made an off-hand remark that it would be nice to have the tables for the Behrens Test extended beyond what was in Fisher and Yates: Statistical Tables for Research Workers, a very important book in its day.

So, I wrote a program to do this. The only computer that I could use was in Melbourne University, which meant debugging by post. But after a couple of weeks, I had reams of paper and, prudently, I checked the values my program had given against all those in Fisher and Yates. I found that two of my values did not match. I spent all one Saturday on a mechanical desk calculator checking and re-checking (a triple integration) until sure that my program was right.

> Continued on page18

On Monday, I dropped in nonchalantly to deliver the results. Fisher took the output and devoured (I can think of no better word) those pages of numbers, probably looking for confirmation or refutation of what he had been working on. After quite a time, I said very tentatively: "I think two values in Fisher and Yates are wrong". Without raising his eyes, Fisher said: "I know". So I left.

But when we met again at tea-time, he thanked me warmly. And I still remember the extraordinary intensity with which he seemed to be absorbing the pages and pages of output data.

I suspect that Fisher felt a little isolated at times. Certainly, we had no-one of comparable intellect. But once or twice, we took him to the pub where, as a small man, he needed only one glass of beer to become quite jovial. While acknowledging the great difference in background and ability, and despite his fearsome reputation for being prickly, I remember him as very likeable. And, I think he liked the contacts with young people.

My wife met Fisher a number of times. Arriving at our floor one day with our son Richard, she was not surprised to find Fisher waiting for the lift. But she was a little startled when, before entering the lift, Fisher swept Richard up and gave him a big hug; at age 3, Richard was undoubtedly cute. Now working with Statistics New Zealand, Richard has at times suggested that this contact may have been what started him on his career path.

In a long career, I met many scientists who had excelled in their field. It was always a privilege to talk to them, and to try to understand how they had been able to achieve what they had. This was particularly so in the case of R A Fisher.

John Penny*

**John Penny became a computer scientist and in 1972 was the Foundation Professor of Computer Science at the University of Canterbury in Christchurch, NZ. On his retirement he returned to Adelaide.*

SSAI'S MEMBER-GET-A-MEMBER CAMPAIGN

SSAI's 'Member Get a Member' program offers an outstanding financial incentive for existing members of SSAI to introduce new full members. With each new full member you introduce, you receive a 25% reduction on your next year's membership: introduce four new full members and your membership next year will be free!

No one knows the benefits of membership with SSAI more than you, our members! Consider sharing your SSAI membership experience and get rewarded for doing so. Through the Member-Get-a-Member program, the SSAI will reward your efforts.

Every time you recruit a new member, you strengthen the SSAI. A vital and growing SSAI means greater recognition of the statistical profession, improved educational and networking opportunities for all members, and the advancement of statistics worldwide.

There are several ways you can help the SSAI grow:

You can simply provide us with the name and contact details of the potential member and we'll send them a membership information package.

You can print out a membership application and give it to the prospective member. Please note your name "Referred By" space before you hand over the form.

You can direct them to the SSAI website where the prospective member can join online right away!

Tips on recruiting new members

- Invite a prospective colleague/student to attend a Branch meeting to experience first-hand the professional benefits of SSAI membership.
- Start a discussion about your SSAI membership, emphasising the benefits and value. If you think a brochure might be helpful, the SSAI office can provide you with some leaflets.
- If you receive the Australian and New Zealand Statistical Journal in hard-copy, keep some issues on display to attract the eyes of potential new members.
- Publish an article in your organisation or university publications explaining how SSAI helped you.
- Post announcements of SSAI meetings/conferences/workshops/webinars.
- When discussing membership with a prospective member, listen for clues as to what they look for in a professional society. Stress those member benefits that meet their needs.
- Coordinate an event at your place of employment with the administrative support of SSAI.

CANBERRA FORUM

'Getting Value from Panel Surveys'

Session: Panel Survey Design [speaker to be confirmed]

Friday 28th September, 2012, 2.30pm -4.00pm

Wickens Room, ABS House, Canberra

The session focusses on design of public sector longitudinal surveys, serving both for evaluating programmes and as a source of statistical information on individual experience. How are these two broad objectives balanced? The DEEWR employment services survey DAISES will be subject of a presentation. Participants will bring their own questions, experience with, and insights on design to round out the session.

Reference: 'Methodology of Longitudinal Surveys' Ed. P. Lynn, Wiley 2009, Chapter 2 Sample Design (Smith, Lynn and Elliot)

For further information contact: Daniel Gow (x6252 6732) or Stephen Horn (x6146 2402)

WEBINAR WITH BEN FARRELL

On Tuesday, 28 August 2012, Ben Farrell, UNHCR Canberra's External Relations Officer, presented at a webinar on "Global Trends, Local Interpretations: Statistics & the Asylum Debate Ben Farrell, UNHCR". In his role with the UNHCR, Ben is responsible for building and maintaining relationships with stakeholders in the government and non-government sectors, as well as undertaking media liaison and communications activities for UNHCR.

Established in 1951, the UNHCR (United Nations High Commissioner for Refugees) provides and coordinates international relief for refugees and displaced people, offering them protection and assistance . UNHCR hopes to contribute to informed decision-making in refugee operations and in policy development by providing accurate, relevant and timely data and statistics.

At the webinar, Ben Farrell discussed the Agency's latest statistical reports and explained the way they are interpreted and reflected in the current media and political debate. He was able to show several examples of politicians and media using incorrect figures to further their own agenda.

UNHCR currently cares for more than 26 million people in 123 countries - 80% of whom are women and children - who have been forced to flee their homes because of conflict, disaster and persecution.

A global UNHCR report released to coincide with World Refugee Day 2011 revealed that four-fifths of the world's 15.4 million refugees are hosted by developing countries, and that three-quarters of all refugees reside in countries neighbouring their country of origin. The Global Trends 2010 report shows that Pakistan, Iran and Syria host the largest refugee populations, with 1.9 million, 1.1 million and 1 million respectively, while Pakistan, Democratic Republic of Congo, and Kenya bear the largest impact of hosting refugees in relation to the size of their economies.

These figures stand in stark contrast to the numbers presented in media reports about supposed floods of refugees in industrialised countries. Compared to the overall figures, the number of refugees and asylum-seekers in Australia remained relatively stable with an estimated 23,434 refugees and 5,242 asylum-seekers hosted at the end of 2011. New Zealand is estimated to host some 1,934 refugees and 240 asylum-seekers at the end of 2011. If you are interested reading more statistics, please go to http://unhcr.org.au/unhcr/index.php?option=com_content&view=category&layout=blog&id=46&Itemid=92

Marie-Louise Rankin

12TH NATIONAL RURAL HEALTH CONFERENCE
ADELAIDE CONVENTION CENTRE
SOUTH AUSTRALIA, 7-10 APRIL 2013

CALL FOR ABSTRACTS

NATIONAL RURAL HEALTH ALLIANCE INC.

OPEN 1 JUNE 2012 – 1 OCTOBER 2012

Would you like to be on the program at the 12th National Rural Health Conference in Adelaide in April 2013? If so, submitting an abstract is the first step! Find out all you need to know, and submit your abstract, by going to the Conference website via www.ruralhealth.org.au

The 12th Conference will capture the inspiration and success of previous Rural Health Conferences, while focusing more than ever before on the positives: on the creativity, teamwork, resilience and sense of community that characterise so many rural and remote areas.

Abstracts are sought for four **presentation formats** and in four **content areas**.

Presentation formats
General paper (20 minutes)
Peer-reviewed paper (20 minutes)
Soapbox (10 minutes)
Poster

Content areas
Research: previously unpublished reports, with evidence from quantitative and/or qualitative methods.
Service review: practical reports of projects on the ground and evidence-based descriptions of successful service delivery.
Policy: analyses of public policies that impact on health and wellbeing in rural and remote areas.
Arts and health: dealing with arts and health activity of particular value in rural or remote settings.

Presentation **Topics** might include multi-disciplinary training, oral health, maximising the rural benefits of a reformed health system, health in mining communities, eHealth, mental health, a fair go for rural health consumers, progressing Aboriginal and Torres Strait Islander health, improving the social and economic determinants of health, winning the workforce we want, learning from the successes of others in Australia and overseas, successfully managing chronic conditions, and lessons from natural disasters. A full list of topics can be found on the Conference website and in the abstract guidelines.

The abstract guidelines contain everything you need to know about the formats, content areas, topics, the assessment criteria to be used, timelines and how to submit an abstract.

Visit the Conference website via www.ruralhealth.org.au

STRONG COMMITMENT BRIGHT FUTURE

Contact:

Leanne Coleman – Conference Manager, 02 6285 4660
Kellie Sydlcarczuk – Conference Co-ordinator, 02 6285 4660

For information on rural and remote health in Australia, visit **www.ruralhealth.org.au**

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PERSPECTIVES IN STATISTICS FOR YOUNG STATISTICIANS

Perspectives in Statistics for Young Statisticians (a slightly edited written version of the oral presentation made at the Australian Statistics Conference on 10 July 2012)

My name is Noel Cressie. Here's a brief bio:

- Graduated from John Curtin High School (Fremantle, WA) in 1967
- Graduated with a BSc (Hons) from U. Western Australia in 1972
- Graduated with an MA and a PhD in Statistics from Princeton U. in 1973 and 1975, respectively
- Postdocs in Paris and London in 1975, where I learned to speak French and English, respectively.
- Three permanent jobs: Flinders U. (7 years), Iowa State U. (15 years) and Ohio State U. (14 years)
- About to take up my fourth job: U. Wollongong, starting in October 2012

Without sounding too much like a professor, here are seven "do's" and "don't's" for you to consider - take the ones you like!

Do...learn as much mathematics as you can as early as possible in your education. Statistics is not a branch of mathematics, but mathematics is usually an essential tool for solving statistical problems.

Do not...avoid social and cultural experiences. Go to parties - it makes you a better statistician!

Do...read widely in the core of statistical theory and methods, during your PhD studies and beyond.

Do not...stay in your office working all the time. Rather, make friends with PhD students in statistics and in other disciplines. You'll make lasting, wonderful friendships during a special time of your life, and you'll learn from each other.

Do...find a mentor; your PhD advisor or your postdoc supervisor are naturals. If you're a freshly minted PhD on faculty or in industry, look for someone who understands your research area. It's OK to cultivate a second mentor, perhaps outside your research area.

Do not...say "No" very often to professional opportunities, although they often come with extra work. Your mentor will help you prioritize, and they can give you feedback as you progress through the task.

Do...treat every task (assigned or taken on voluntarily) professionally and with cheer, from initiation to timely completion.

Do not...avoid new opportunities thinking you are inexperienced. If someone asks you to do something, they think you can do it! This is your way to get experience...

Do...choose important problems to work on. They should be important to the field, and they should be important to you! Again, your mentor can help here.

Do not...undertake collaborative work with "weak" scientists. You won't learn all that much. Are they curious people, in particular about the stats you help them with? Do they work on important problems in their field? Use Google and your gut to help you decide whether you want your initial meetings to develop into a collaboration. (This is a case where your mentor may turn silent if you request an opinion.)

Do...gauge the level of support and enthusiasm for statistics at your institution/company. "Interview" your department head/boss about the future of statistics and its role in important projects. Ask if there is a strategic plan. Take the responses at face value, but see how they match with what actually happens over a period of a year or so.

Do not...forget the adage, "The more it changes, the more it stays the same." We remain a cinderella discipline, and if there is a history of under-appreciation at your institution/company, find out from your head/boss why it will be different in the future. Tradition and momentum are huge components of your statistical well-being.

Do...work really hard on your communication skills, written, oral, and yes "body language." Publish the original pieces from your PhD dissertation, speak on them at conferences, and simultaneously start working on the next research problem. Try to establish a pipeline of projects at different stages of maturity.

Do not...ever stop doing research or appreciating research. You were hired because of it, and you'll be most appreciated if you maintain a research dimension, even when you become a manager.

Enough of the sevens. Dick De Veaux (from Williams College in Massachusetts) gave some presentations around 2005, with a title that I shall freely paraphrase as: "Math is to Wolfgang Mozart as Stats is to Charles Dickens...or Why There Are No Six-Year-Old Novelists." Now you can see why those parties I urged you to go to are so important in your statistical training! You need to get out more, you need to be more worldly, and you need to learn about variability and uncertainty, to be a great statistical scientist. I have Great Expectations for you...be happy and do good work.

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NSW BRANCH

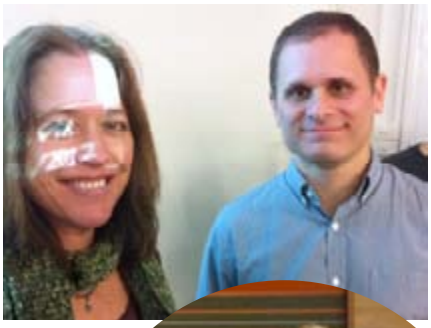
Members of the NSW Branch have experienced a wide range of exciting events over the last few months. For up-to-date information on the Branch's activities please visit the Branch's webpage (http://www.statsoc.org.au/nsw-home.htm) or Facebook (https://www.facebook.com/SSAINSW) page.

Attendees of Jake Olivier's May talk on Australian mandatory bicycle helmet laws were not only treated to statistical aspects of modelling injury rates, but also to perspectives on what it is like to work in an area that arouses the ire of some folks. Indeed, the discussion following the talk neared a level that could be described as passionate – definitely not typical for a statistics talk!

Dr Olivier began by giving some history on mandatory helmet laws, as well as some of the controversy surrounding them, including some questionable statistical analyses. He then discussed the analyses which he and colleagues performed on bike head injury rates as compared to arm injury rates in NSW, before and after the law, which included negative binominal models and interrupted time series. His analyses, including extensive sensitivity analyses, all pointed to the conclusion that the law has reduced head injury rates in NSW.

Dr Olivier then discussed various arguments against the benefits of the law and showed how they largely rested on flawed logic or very strong assumptions. An example of one such argument is that the trade-off between the increased rates of obesity (due to people not riding bicycles because they would have to wear a helmet) and decreased head injury is not worth it, from a public health perspective. However, this makes the strong assumptions that these people will 1) not do any exercise and 2) will become obese.

The talk was finished with an argument for more cycling infrastructure. All in all, a very lively and interesting evening.



Melanie Bell and Jake Olivier

Professor Paul Embrechts

The June meeting was very much a joint affair: co-organised with CSIRO and the Sydney Financial Mathematics Workshop, with support from the Discipline of Business Analytics of the University of Sydney Business School and UTS Quantitative Finance Research Centre, and generously sponsored by Westpac who provided the venue and refreshments.

The speaker was the very distinguished Professor Paul Embrechts from EHT, Zurich, the eminent statistical researcher and actuary. His talk was in two parts. Firstly he gave a concise overview of the role of statistics in risk management and finance, regaling us with talk of the "devil's staircase" and the abyss one may fall into from atop it. He related in particular how he and his colleagues have been actively involved in helping shape the evolution of the international regulatory framework for banks put out by the Basel Committee on Banking Supervision (Basel I, Basel II, Basel 2.5, Basel III and Basel 3.5).

One of the main points is that emphasis is finally shifting (much to Professor Embrechts' relief) from the use of Value at Risk (VaR – a high upper quantile of the loss distribution) to Expected Shortfall (ES - the expectation of a large loss, given that a large loss occurs) as a means of monitoring and hopefully controlling risk levels. In fact there were multiple references to ES as Professor Embrechts joyfully made connections between various aspects of the subject matter of his talk and work by an audience member, Professor Eugene Seneta, affectionately known as ES by some of his colleagues!

The second part of the talk was a brief expose of some recent research of his: using a novel nonparametric generalisation of the classical extreme-value theory method of "peaks-over-threshold" to obtain dynamic estimates of upper

Arthur Hung, Richard Gerlach, Paul Embrechts, Gerda Janssens and Boris Choy.

quantiles of future observations of a time series. The classical approach models exceedances above a fixed threshold as generalised Pareto distributed, following a homogeneous Poisson process in time but can be needlessly conservative when short bursts of high volatility occur in the data. His new method incorporates a general error distribution, a GARCH-like error structure to capture the volatility, a Bayesian method of smoothing based on a Laplace prior distribution which gives the method lasso-like penalisation properties and other novel features. He showed with some examples that it manages to cope very well with explosive bursts of activity and ameliorates very satisfactorily the problems with the classical approach.

In all his talk was inspiring, illuminating and entertaining. It is rare that someone can give such an authoritative and accessible presentation in the areas of extreme value theory and finance. We were lucky indeed to have witnessed it! Afterwards we had an excellent Indian banquet dinner in Darling Harbour.

On 13th August, we saw the Closing Ceremony at the Olympic Games, after 16 nights/mornings of sports. To reduce withdrawal symptoms, the NSW Branch turned to drug abuse on August 14th. After pre-meeting drinks, we had a brief podium event in which Scott Sisson, Branch President, presented William Dunsmuir (UNSW) with his SSAI Service Award and Garth Tarr (USyd) with the Pitman Prize for best student presentation at the recent Australian Statistics Conference.

William Dunsmuir receiving an SSAI service award, presented by Scott Sisson.

However, the gold medal performance for the evening was by Glenn Stone of the University of Western Sydney. His talk was entitled "Statistical Experiences in Testing for Growth Hormone Abuse in Sport". Glenn's experiences arose in collaboration with the Pituitary Research Group at the Garvan Institute, with funding from the World Anti-Doping Agency (WADA).

Substances are banned if they score two positives out of (1) the substance improves performance (2) it is a risk to the athlete's health and (3) it violates the spirit of sport. There is not unequivocal evidence that Growth Hormone (GH) enhances performance, but evidence suggests it may improve performance by 4% (roughly the difference between 1st and 7th in the Men's 100m in London).

Garth Tarr receiving the Pitman Prize, presented by Scott Sisson

GH is detected in blood samples. Because it is naturally occurring, the detection of GH abuse is not "presence/absence" but rather of levels elevated above "normal". Thus good estimates of the distribution of GH levels in the "clean" population are required, particularly as the acceptable false positive rate is 1 in 10,000. Glenn described experiments carried out to assess the effect on performance of GH and problems in determining the distribution of GH in the clean population – particularly as it is age-dependent and data may be contaminated by non-clean samples. He also touched on the use of bio-markers, as well as providing some insights into the world of doping and anti-doping.

Murray Cameron, Melanie Bell, Michael Stuart and Scott Sisson

QLD BRANCH

QLD Branch Meeting May 2012

Political selection and the relative age effect

Daniel Muller and Lionel Page

At the May meeting of the QLD Branch Lionel Page from the School of Economics and Finance at Queensland University of Technology (QUT) presented collaborative work with QUT colleague Daniel Muller on the "relative age effect" in political selection.

Many countries, including Australia, have a cut-off date for determining when a child commences school such that children born immediately after the cut-off date (at the beginning of a new school cohort) are almost a year older than those born immediately before the cut-off date (at the end of the annual cohort). The effect on peoples' lives of being relatively older (or younger) in their school cohort is referred to as the "relative age effect" (RAE). Lionel presented results from his research showing a strong RAE in the selection of current (as of June 2011) US politicians (Senators and Representatives). Evidence for the effect was initially demonstrated using a Maximum Likelihood version of Barnett and Dobson's (2009) Bayesian Sawtooth test which involved testing for breaks in a uniform distribution of births. Similar results were obtained using a Generalized Sawtooth Test which does not assume a uniform distribution of births, and McCrary's (nonparametric) Test. The proposed mechanism for the RAE is an initial advantage in developing leadership and other competetive skills conferred by age/size and subsequent multiplicative accumulation of leadership skills. Robustness checks found no evidence for four competing explanations, including mothers' education and strategic child bearing behaviour.

While the talk focussed on the benign topic of selection of US politicians, Lionel drew attention to a more serious side of the RAE. Studies have consistently found negative effects of being relatively younger, including inferior performance in school, particularly during earlier years, less likely to enrol at university, higher probabiity of being diagnosed with Attention Deficit Hyeractivity Disorder, and higher probability of having psychological disorders and committing suicide.

QLD Branch Meeting June 2012

Understanding demand and capacity to improve health service delivery

The June meeting of the QLD Branch was held in the University of Queensland Health Sciences Building at the Royal Brisbane and Womens' Hospital, Herston. Justin Boyle from CSIRO described collaborative work with Queensland Health aiming to improve the management of hospital resources through applied patient flow analytics. The context for this work is overcrowding in hospitals and the effect of bed availability on patient outcomes.

Justin's talk covered three areas of active research. The first was the development of a patient admission prediction tool used for daily and weekly bed planning. The tool predicts Emergency Department and inpatient bed demand and is used to assist in bed management and elective surgery decisions. A key question concerns the accuracy of forecasts from the tool which currently predicts with approximately 10% error. Complicating issues are variation in demand due to special days (public holidays and the day before and after a public holiday) and enormous variation in demand by hospital site. The second area of research involves analysing patient flow from admission to

discharge. Basic underlying models are autoregressive and using exponential smoothing. Adverse events are rare but important components of patient flow and these are being modelled using binomial, negative binomial, and zero-inflated binomial models. Predicting risk of readmission is the third area of active research between CSIRO and Queensland Health. A variety of statistical methods are in use, including logistic regression with stepwise selection of variables and regression tree partitioning of some variables (e.g., Charlson comorbidity index). Models are developed using 25% of data for training. Area under the ROC curve diagnostics indicate mediocre prediction accuracy and a key future issue will be efforts to improve the accuracy of readmission risk prediction.

Elaine Pacoe

SSAI WEBINARS

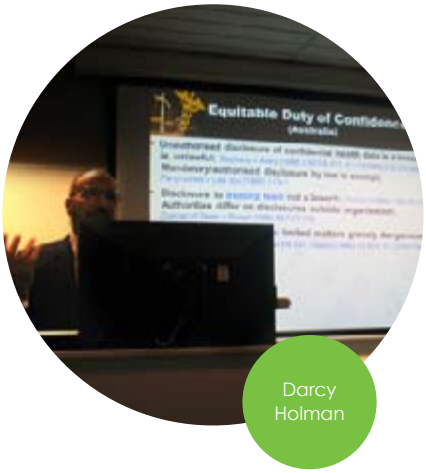
SSAI members can now look forward to a whole program of monthly "Lunch and Learn" webinars under the heading 'Statistics: making a significant difference', planned for the upcoming twelve months. With this series, which features speakers from Australia and overseas, the SSAI wishes to contribute to the "International Year of Statistics 2013" and the "Maths of Planet Earth" initiative by AMSI.

Speakers who have already confirmed their willingness to participate are

- Noel Cressie, Professor of Statistics, University of Wollongong and The Ohio State University
- Adrian Smith, Director General, Knowledge and Innovation, Department for Business, Innovation and Skills (BIS), UK
- Alan Gelfand, J.B. Duke Professor of Statistics and Decision Sciences, Duke University, USA
- Chris Green, Professor of Economics, McGill University, Montreal
- David Elston, Director, Biomathematics & Statistics Scotland
- Louise Ryan, Chief of CSIRO Mathematics, Informatics and Statistics
- Marie Davidian, ASA President-Elect and the William Neal Reynolds Distinguished Professor of Statistics at North Carolina State University as well as the director of NCSU's Center for Quantitative Sciences in Biomedicine
- Ron Sandland, Ron Sandland , ex-Deputy Chief Executive of CSIRO
- Terry Speed, Professor, Walter and Eliza Hall Institute of Medical Research
- Virginia Wheway, Environment, Health and Safety Director for Boeing Australia

SA BRANCH

Anonymity and Research: Data Linkage and the Law



Darcy Holman

The SA branch's July meeting was a joint SSAI and Flinders University event. The presenter, Professor Darcy Holman, Chair Public Health, School of Public Health, UWA, was introduced by A/Prof Richard Woodman, the Director of the Flinders Centre for Epidemiology and Biostatistics (FCEB). The event was a public lecture designed to mark the formal re-launch of FCEB and was well attended by both SSAI members and researchers from the three South Australian Universities.

In his talk on "Anonymity and Research", Professor Darcy Holman aimed to provide a "101" of health research law in Australia by reviewing some of the key points of Australian law that apply to personal confidentiality, rights and privacy issues that are typically encountered when dealing with de-identified unit record linked health data used for research.

For illustrative purposes Professor Holman began by developing a fictitious scenario involving a typical set of persons that might be connected when a researcher attempts to perform research using data that was never originally intended for the purpose of research. In this particular instance, a prostate cancer patient (Mr Citizen) obtains subsidised herbal extracts from a pharmacist (Ms Mortar) who is paid a subsidy under a new Government Complementary Medicine Benefits Scheme (CMBS), upon the Health Departments receipt of personally identified data about the dispensed medicine. In addition, Mr Urol, who treated Mr Citizen, disclosed named data without consent to a hospital based cancer registry, whose data on vital status is updated using personally identified files of death registration data disclosed by the government registrar. With the assistance of the Data Linkage Unit, Dr Inquiry, a pharmaco-epidemiologist, receives anonymous but linkable prostate cancer and death data from the hospital, and CMBS data from the health department to perform a study that aims to assess whether phytoestrogens in some herbal preparations cause treatment failure in prostate cancer.

Professor Holman then went on to discuss the various forms of legal rights and duties afforded to each of the fictitious players. In particular, what were the rights of Mr Citizen in terms of ownership and privacy, and what were the duties of the data custodians in terms of confidentiality i.e. what is the duty of the receiver of data not to disclose that data to other persons? In the given scenario this translated to "what were the rights and duties of the CMBS data custodian, the hospital cancer registry custodian and the death registry custodian"?

The legal definitions of ownership in the general sense within Australia and the ownership of health data within Australia were described. In this scenario the question of ownership was whether or not Mr Citizen owned the data held by the Health Department, hospital or Dr Inquiry, to which the answer was suggested to be "No", since no-one owns these type of data as common law property.

Types of registers covered by data linkage systems were described including in-house (the hospital registry), voluntary and statutory (CMBS). The answer to the question of whether either Mr Urol or the Government Registrar had breached confidence was in both cases suggested to be "No" given the nature of the in-house hospital registry (which is there to support planning and research relevant to the organisation), and/or possible approval by an Ethics Committee, as well as the fact that medical research is an implied purpose of death registries.

> Continued on page 29

In regards to privacy, the question at hand was whether or not the linkable data provided to Dr Inquiry about Dr Citizen which contained several unique variable values was a breach of the Privacy Act. Again, the answer was "no" provided that either a privacy release mechanism had been exercised such as through gaining approval for the research by an Ethics Committee, or by a delegated official in the case of a statutory register. The answer would also in any case be "No" if the data were anonymised n some way.

This lead to the final discussion; the issue of anonymisation of health data. Within Australia, provided that health data is anonymised, it cannot be treated as personal information and the principles of personal protection therefore no longer apply. That then leads to the question of "At what point that data can be considered anonymised in legal terms"? As was pointed out, this may in fact be some way below the level of anonymisation required for complete data security, although the legal threshold is often confused with a technical aspiration for perfect data security that goes far beyond legal requirements. Even data custodians appear to be guilty of being over-zealous in this respect. Finally, the talk was concluded with a view of what might be considered the most effective form of data governance. Perhaps this might be one in which there was a three-legged approach which combined the issue of data security with consideration of research functionality and a healthy level of community participation.

Following the talk on Thursday evening, Darcy delivered his five-day workshop on an "Introductory Analysis of Linked Health Data" on 13th-17th July hosted by the Flinders Centre for Epidemiology and Biostatistics at Flinders University.

Richard Woodman

Planned home births in South Australia 1991-2006: lessons now and for the future

The May 2012 meeting was presented by Graeme ("Tommy") Tucker, a research statistician with 37 years' experience across a wide range of government and private sector settings. For the past 11 years, Graeme has been Head of the Health Statistics Unit in the Epidemiology Branch of what is now called SA Health.

To obviate any potential government confidentiality issues, Graeme presented on already published data in: Robyn M Kennare, Marc J N C Keirse, Graeme R Tucker, Annabelle C Chan "Planned home and hospital births in South Australia, 1991-2006: difference in outcomes", MJA 2010 Jan 18;192(2):76-80.

In this study, the authors looked at: perinatal mortality, intra-partum death, intra-partum asphyxia, Apgar score less than 7 at 5 minutes, specialised nursery care, postpartum haemorrhage, episiotomy and third or fourth degree perineal tears. Terminations of pregnancy and pregnancies with no antenatal care were excluded. Data were analysed as planned hospital or home births. Planned home births also were divided into those born at home and those transferred to hospital.

Overall, there were 297,192 planned hospital births and 1141 planned home births, 792 born at home and 349 transferred to hospital. There were 2449 perinatal deaths from 298,333 confinements.

Analysis was undertaken by considering a range of possible predictors. Those predictors with a significance probability less than 0.25 in bivariate models were retained as possible explanatory variables (Hosmer and Lemeshow

SSAI member Melissa Dobbie with her first child Oscar - not a homebirth!

(1989)). Variables were selected by backward elimination of non-significant terms (Thompson (1995)), checking for confounding with home birth at each step, using unconditional logistic regression. To avoid bias a conditional logistic regression model was fit using the nuisance variables to form the strata (Breslow & Day (1980)). The Mantel-Haenszel estimate of the common odds ratio, and the test of homogeneity were also produced to provide an alternative estimate if the conditional maximum likelihood solution failed to converge (Rothman (2002)).

Graeme presented a number of tables of results, which essentially showed that the perinatal safety of home births may be improved substantially by better adherence to risk assessment, timely transfer when needed, and closer foetal surveillance.

Then Graeme described his "Mea culpa" moment, based on discovery of the following paper: Sander Greenland, Judith A. Schwartzbaum, and William D. Finkle "Problems due to Small Samples and Sparse Data in Conditional Logistic Regression Analysis", American Journal of Epidemiology 2000; Vol 151, No 5: 531-539. This paper contained a couple of paragraphs regarding bias in Conditional Maximum Likelihood (CML) Odds Ratios (ORs). The first stated that CML was biased towards values far above the true OR. The second stated that exact logistic regression was only a slight refinement of CML and carried just as much bias.

So when Graeme re-considered these models, he found that analyses from perinatal mortality had not been adversely affected by sparse data; but the analyses for intra-partum death, and especially intra-partum asphyxia seemed to have a problem.

Greenland's recommendations for fixing the problem are in the paper: Sander Greenland "Bayesian perspectives for epidemiological research. II. Regression analysis", International Journal of Epidemiology 2007; 36: 195-202. His solution involves data augmentation to reflect prior knowledge about the predictors. This is a Bayesian approach to estimation of the odds ratio.

Greenland's data augmentation technique involves inventing data to provide a prior distribution for each predictor and then adding these data to the file. In the intra-partum deaths analysis, this involved making up data for an extra 10000 intra-partum deaths from approximately 5 million births and then adding these data to the observed dataset. Analysing this dataset using unconditional logistic regression produces a very close approximation to the posterior probabilities of a Bayesian analysis.

Originally, there were 249 intra-partum deaths from 298,333 confinements. The observed data now would constitute 2.4% of intra-partum deaths and 5.6% of the confinements being analysed.

Graeme presented the results of Bayesian analyses, as set out by Greenland, for intra-partum death by home versus hospital birth, plus by home birth and transferred to hospital versus hospital birth. His interpretation of the Bayesian approach was: inventing many more records than actually observed in order to enter the priors into the dataset produces an unwarranted "shrinkage" of the associated standard errors and confidence intervals. The outcomes of the analyses are almost entirely determined by the choice of prior applied to the predictors and thus basically are unrelated to the observed data. For these reasons Greenland's technique cannot be trusted in this situation.

Relating all this back to their paper, the confusion surrounding the analysis may not be fatal. The substantive conclusions of much of the analyses may be unchanged. Episiotomy and specialised nursery care probably are still less likely

for planned home births born at home and intra-partum asphyxia is still more likely for planned home births born in hospital. However, some of the other conclusions from the analysis are in question.

Wayne Clapton

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Accurate forecast using functional data analysis

Shahid Ullah

Dr Shahid Ullah is a Senior Lecturer in Biostatistics in the Flinders Centre for Epidemiology and Biostatistics at Flinders University. Shahid received his Ph.D. degree in Statistics from Monash University and his PhD work provided a new and innovative set of tools known as functional data analysis which was the focus of this talk to the SA Branch in June.

Time series forecasting is an important research problem for many real life domains such as forecasting fertility and mortality rates. Over the last two decades there have been many methodological developments in demographic forecasting. Ideas from functional data analysis, nonparametric smoothing and robust statistics are combined to form a methodology that is widely applicable to any functional time series data observed discretely and possibly with error.

In his talk Shahid described the smoothing framework (estimating smooth functions using penalized regression splines), functional principal component and the forecasting coefficient (using ARIMA models) to set up the forecast function. Out of sample forecast accuracy assessed using the forecast residual sum of squares (FRESS) showed that this method had better accuracy than other mortality and fertility forecasting methods.

This new method is proposed for forecasting age-specific mortality and fertility rates observed over time. This approach allows for

(i) smooth functions of age (useful graphical tools)

(ii) is robust for outlying years (due to wars and epidemics)

(iii) cohort effects

(iv) prediction intervals, and

(v) provides a modelling framework that is easily adapted to allow for constraints and other information.

In summary, ideas from functional data analysis, nonparametric smoothing and robust statistics are combined to form a methodology that is widely applicable to any functional time series data observed discretely and possibly with error.

Paul Sutcliffe