The Statistical Society of Australia
News

SSAI

In this issue

J.B. DOUGLAS AWARDS AND ANNUAL LECTURE

The J.B. Douglas Awards 2012 held by the SSAI NSW Branch is the 13th consecutive year in which the event was held. It strives to honour the contributions to statistics made by Professor Jim B. Douglas, who sadly passed away earlier in the year. The purpose of the Awards is to provide a visible platform to showcase the depth, breadth and excellence of research conducted by PhD students in Statistics and related fields such as Econometrics, Business Analytics and Biostatistics. It was held on the afternoon of Tuesday 20th November 2012 at the Aerial Function Centre, University of Technology Sydney.

Generous sponsorship was provided by the Australian Bureau of Statistics, CSIRO, School of Mathematics and Statistics (University of Sydney), School of Mathematics and Statistics (University of New South Wales), Centre for Statistical and Survey Methodology (University of Wollongong), Department of Statistics (Macquarie University) as well as SAS.

This year there were nine presenters from six universities who took on the challenge of attempting to impress their statistical colleagues with their new and innovative research. All nine students did a tremendous job, with the standard of work being exceptional. Talks ranged from the areas of Bayesian Computation, Data Confidentialisation, Biostatistics, Longitudinal Analysis and Econometrics.

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From left: Duy Tran (Newcastle), Carson Drummond (Wollongong), Matthew Fitzpatrick (USyd), Ellis Patrick (USyd), Sheng William Liu (Newcastle), Zach Aandahl (UNSW), Scott Sisson (NSW Branch President), Hong il Yoo (UNSW), Madawa Priyadarshana (Macquarie), and Timothy Ling (UTS)

The first prize was awarded to Carson Drummond from the University of Wollongong.

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DEADLINE FOR NEXT NEWSLETTER
10 August 2013

EDITORIAL

The year is well under way now, and events are coming thick and fast, associated with the big celebrations of the International Year of Statistics, the Mathematics of Planet Earth and the Decadal Plan for the Mathematical Sciences.

In this editorial we're focusing on the Mathematics of Planet Earth, with a conference in Melbourne in July that features two Society members amongst the speakers. The information below was sourced from the conference website http://mathsofplanetearth.org.au/speakers/.

Simon Barry leads the Environmental and Agricultural informatics program at the CSIRO Division of Mathematics, Informatics and Statistics. This program carries out research on a diverse range of environmental statistical challenges such as continental landcover monitoring, indicator frameworks and climate projection downscaling. During 1997-2007 Simon worked at the Australian Government Department of Agriculture, Fisheries and Forestry where he developed and implemented novel methodologies to produce a National Landuse Map of Australia, developed the statistical framework for the Atlas of Australian Birds, and was a lead author for the uncertainty chapter of the 2002 good practice guidance and uncertainty management in National Greenhouse inventories.

Bronwyn Harch is the Chief of CSIRO Division of Mathematics, Informatics and Statistics. Prior to her appointment as Chief in October 2012, she was the Deputy Director of the CSIRO Sustainable Agriculture Flagship. In that role she managed multi-Divisional programs that focused on engaging agri-environmental information sciences such as maths, stats, informatics and ICT into increasing agricultural productivity, whilst also minimising any associated environmental impacts.

If you're planning on attending the conference, we'd love to hear how it goes, and we'd love to hear about any other events that branches are arranging as part of these three national and international celebrations. Two to five hundred words is the typical length of a newsletter article, and photos are always welcome too.

Alice Richardson

and **Michael Adena**

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EVENTS

BAYSM-BAYESIAN YOUNG STATISTICIANS MEETING

5-6 June 2013, Milan, Italy

MPE2013 AUSTRALIA CONFERENCE

8-12 July 2013, Melbourne

INTERNATIONAL CONFERENCE ON ROBUST STATISTICS

8-12 July 2013, St Petersburg, Russia

JSM2013

3-8 August 2013, Montreal, Canada

SAS FORUM 2013

8 August 2013, Sydney

NATIONAL MATHEMATICS DAY 2013

16 August 2013

THE 59TH WORLD STATISTICS CONGRESS

25-30 August 2013, Hong Kong, China

CPD43: ADVANCED ANALYSIS OF LINKED DATA

25-29 September 2013, Adelaide

INTERNATIONAL CONFERENCE ON STATISTICAL DISTRIBUTIONS AND APPLICATIONS (ICOSDA13)

10-12 October 2013, Mt Pleasant, MI, USA

2013 NZSA CONFERENCE

24 – 27 Nov 2013, University of Waikato, New Zealand

BIOMETRICS BY THE CANALS

1-5 December 2013, Mandurah, WA

20TH INTERNATIONAL CONGRESS ON MODELLING AND SIMULATION (MODSIM2013)

1-6 December 2013, Adelaide

FOURTH BIENNIAL INTERNATIONAL STATISTICAL ECOLOGY CONFERENCE (ISEC2014)

1-4 July 2014, Montpellier France

AUSTRALIAN STATISTICAL CONFERENCE (ASC2014)/IMS ANNUAL MEETING

7-10 July 2014, Sydney

ISBA 2014 - TWELTH WORLD MEETING OF ISBA

14-18 July 2014, Cancun, Mexico

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All presenters received a certificate for their participation, but there could only be one winner. The expert judging panel consisting of Adrian Baddeley, Scott Sisson and Boris Choy crunched the numbers, and after a long period of deliberation, declared Carson Drummond from the University of Wollongong the winner! His presentation struck a superb balance between strong technical development and a well-crafted presentation, truly deserving of the $1000 prize.

Following the award ceremony, the Annual Lecture was presented by Professor Adrian Baddeley from CSIRO Mathematical and Information Sciences and the University of Western Australia. His talk entitled 'Missing the point' captivated the 60 attendees, with unique anecdotes surrounding the development of modern statistics. His comments comparing to the field physics were particularly enlightening. Adrian also provided useful discussion surrounding the analysis of regression diagnostics when applied to a point process framework. A superb talk that left everyone wanting more.

With the nice weather and view from the function, unlimited amounts of beer, wine, and juices were delivered to refresh the attendants from ten talks. After few drinks, lots of (statistical) ideas and discussions could be heard from the crowd. The conversations and chats were continued on the dinner tables where people were served by a bundle of delicious dishes, e.g., antipasto platter, roasted scotch fillet of beef with a shiraz jus, lamb masaman with peanuts, crumbed fish with tartare sauce, and vegetable and noodle stir fry with a chilli sauce.

Hopefully, all attendants went back home and had a good sleep with a head full of statistical ideas and a stomach full of good food and drink.

Nate Wichitaksorn

The Annual Lecture on 'Missing the point' given by Professor Adrian Baddeley

Professor Adrian Baddeley (left) and NSW Branch President Scott Sisson

PRESIDENT'S COLUMN

Dear members

This year is promising to be very busy with activities related to our profession. These range across government policies directed at teaching mathematics and statistics in schools, changes in research funding for statistics-related activities, to growing awareness of the impact of data (particularly 'big data' and 'data science') among business and industry groups, and more specific forums, seminars and workshops undertaken as part of Mathematics of Planet Earth and the International Year of Statistics. Many of these activities are highlighted on our SSAI website. If you have other information that you think would be of interest to other members, please contact our Executive Officer, Marie-Louise (eo@statsoc.org), or your Section Chair or Branch President to discuss its inclusion on the website.

Speaking of websites, we are well on the way to having a new site that will be more visually appealing and more flexible in terms of interaction and facilities. The update is being coordinated by our Executive Officer in collaboration with the Executive Committee. The new website will enable us to engage more easily with our members and offer a greater range of services and information. If there are enhancements that you would particularly like to see, please send an email to Marie-Louise (eo@statsoc.org).

I would like to take this opportunity to welcome new members to the Society. We are very pleased that you have elected to join this professional body and look forward to your active participation through our Branches, Sections and Networks. In extending this welcome, I would also like to acknowledge the contributions of members who have recently retired from the Society and long term members who have recently died. They are part of the fabric of all that SSAI has become.

I will make special mention of the recent passing of Emeritus Professor Alan James, a recipient of the SSAI Pitman medal and long-time Chair of Statistics at the University of Adelaide. Alan's most memorable work was on multivariate analysis and the analysis of variance. A short biography of Alan's life and work was published in the Australian Journal of Statistics, 1993, volume 35, to mark his receipt of the Pitman Medal. Born in 1924 in Bern in South Australia, he attended school and university in Adelaide and then worked in the Division of Mathematical Statistics at CSIRO, led by Alf Cornish. His M.Sc. research, motivated by the recent work of Fisher, was on geometrical interpretations of analysis of variance. After completion of his PhD at Princeton University on multivariate analysis, he returned to CSIRO DMS and later took up an academic position at Yale University, returning to the Chair at Adelaide University in 1965. We remember Professor James as a great contributor to our profession and to SSAI.

This is my last Newsletter column as SSAI President. It has been a great privilege to lead the Society over these past years and I am grateful to all those who have helped at Branch, Section and Executive levels. I am particularly grateful to Doug Shaw, Stephen Horn and Marie-Louise Rankin for their assistance as SSAI Secretary, Treasurer and Executive Officer, respectively. I also extend my sincere thanks to other members who have taken on the various substantive roles integral to the Society, including our tireless ANZJS editorial and management teams and our many Committee members. Finally, thank you to you, the members: the success of our Society is due to all of us.

> Continued on next page

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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.

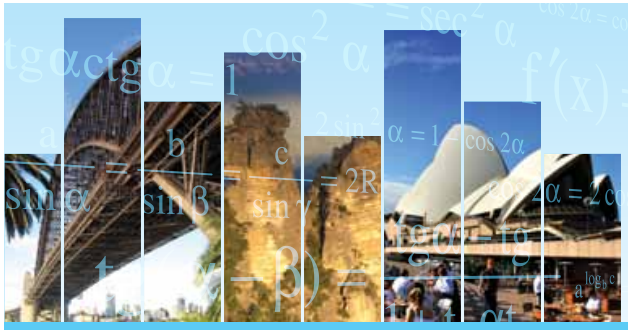
In addition to presentation of SSAI Central, Branch and Section reports, the Central Council welcomed the new set of Branch executives, Section Chairs and Assistant Chairs, and the Central Council Committee. Thank you to all those who have stepped up to these positions – the Society is built on these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



Australian Statistical Conference in conjunction with the Institute of Mathematical Statistics Annual Meeting
ASC-IMS 2014 CONFERENCE

7 – 10 July 2014
Australian Technology Park, Sydney

PRELIMINARY ANNOUNCEMENT
www.asc-ims2014.com

On behalf of the Statistical Society of Australia and the Institute of Mathematical Statistics, the organising committee invites you to register your interest in attending the joint Australian Statistical Conference/IMS Annual meeting, to be held 7–10 July 2014 in Sydney, Australia.

Delegates from all areas of statistics will join with world class Australian and International statisticians and mathematicians to develop, network and share their knowledge and expertise. In 2014 the Statistical Society of Australia will hold its biennial ASC in conjunction with the IMS Annual meeting. The Conference will provide opportunities for presentations on a wide range of topics and recognises the role that statistics plays in all aspects of modern life.

The conference objectives are to:

- Attract world class statisticians to share their knowledge and expertise
- Inform delegates about new work and developments in statistics, probability and mathematical statistics
- Provide an opportunity for professionals from all of these aforementioned areas to network, present and discuss ideas

Topics of interest include but are not limited to: spatial statistics, Bayesian statistics, computational and asymptotic statistics, sample surveys, methodology for official statistics, stochastic/statistical modelling, biostatistics, multivariate statistics, probability, mathematical statistics, econometrics and financial statistics.

The venue for this meeting is the Australian Technology Park in Sydney.

On behalf of the Program Committee and the Local Organizing Committee, we invite you to join us in Sydney for this exciting scientific event. Your participation will ensure that the 2014 ASC-IMS Conference will be a memorable meeting.

MARK THE KEY DATES IN YOUR DIARY:

Abstract Submission opens:
MAY 2013

Registration Opens:
MAY 2013

Abstract Submission Deadline:
30 OCTOBER 2013

Author Notification:
30 NOVEMBER 2013

Early Bird Deadline:
28 FEBRUARY 2014

KEYNOTE SPEAKERS

ASC Keynote Speakers

Adrian Baddeley, CSIRO/University of Western Australia
Sheila Bird, Cambridge University
Rob Tibshirani, Stanford University
Peter Donnelly, University of Oxford
James Brown, University of Southampton

Institute of Mathematical Statistics Keynote Speakers

Terry Lyons, University of Oxford
Nina Gantert, Technische Universität München
Martin Hairer, University of Warwick
Timo Seppalainen, University of Wisconsin-Madison
Harrison Zhou, Yale University

CALL FOR PROPOSALS

You are invited to submit an abstract for consideration for a contributed oral or poster presentation. Submissions will open in May 2013.

As this conference is a joint meeting between the Statistical Society of Australia and the Institute of Mathematical Statistics, an extensive and wide-ranging program will be available. As benefiting an event of this size, with approximately 12 Keynote presentations and 6 parallel streams, a large portion of the program will be by invitation. However, a substantial part of the program will be set aside for contributed presentations, both oral and poster. While there is no restriction on the topic or number of contributed presentations, the number of oral presentations is by nature limited. We encourage participants to submit their abstracts from May 2013.

ADDRESS FOR COMMUNICATIONS

Conference Managers

arinex pty limited
ABN 28 000 386 676

ASC-IMS 2014 Conference Managers

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Email: asc-ims2014@arinex.com.au
Website: www.asc-ims2014.com

Visit the website for further updates: www.asc-ims2014.com

Mathematics of Planet Earth 2013 AUSTRALIA

AMSI Winter School
Public lecture

25 June 2013 (6pm) – The University of Queensland, St Lucia Campus

Environmental Intelligence for Australia

Explore the importance of monitoring, assessing and forecasting environmental states and processes
Understand the challenge to maintain and improve food security, water security and biodiversity
Discover the future of the Bureau of Meteorology: an environmental intelligence service for Australia
Hear how the mathematical sciences is underpinning efforts in environmental intelligence

Dr Rob Vertessy
Director of Meteorology and CEO
Bureau of Meteorology

Supported by :

AMSI Australian Mathematical Sciences Institute · Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education · The University Of Queensland Australia · Biarri Commercial Mathematics · qcif · AMSIIntern

Register to attend: www.amsi.org.au/WS13_PL.php

AMSI AGR
National Seminar Series

2013

AMSI, in partnership with the national mathematical organisations, is initiating a nation-wide seminar series over the Access Grid Network. The seminar series will feature eminent experts in their field from Australia and overseas. It will offer a range of accessible and very high quality seminars for the broader mathematical community in Australia.

Find out more:
www.amsi.org.au/AGR-national-seminar-series

AMSI will start announcing seminars soon.
For up-to-date-information,
please contact **agr@amsi.org.au.**

A collaboration of

AMSI Australian Mathematical Sciences Institute · Aust MS Australian Mathematical Society · SSAI Statistical Society of Australia Inc. · ANZIAM · ANZAMP · asor

In conjunction with

Mathematics of Planet Earth 2013 AUSTRALIA

INVITATION

On behalf of the Australasian Region of the International Biometrics Society I invite you to join us for our biennial conference which will be held in Mandurah, Western Australia, from 1-5 December, 2013. Share your successes and failures with other professional statisticians working in the biosciences, including agriculture, biomedical science and public health, bioinformatics, ecology, environmental sciences and forestry. 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
- Bayesian methods

The four-day conference, 2-5 December, will be preceded by two one-day courses/workshops on Sunday, 1 December:

Statistics for Spatio-Temporal Data given by Prof. Noel Cressie
Vector Generalized Linear and Additive Models given by Prof. Thomas Yee

Further information will become available on the conference website:

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

Kind regards

The Local Organising Committee & the Scientiific Program Committee

INVITED SPEAKERS

Prof. Noel Cressie
(co-sponsored by NIASRA)
NIASRA, University of Wollongong
Spatio-temporal smoothing

Prof. Thomas Yee
Auckland University
Generalized linear models

Prof. Ian James
Murdoch University
Host-viral interactions

Prof. Christine Müller
Technische Universität Dortmund
Prediction of growth processes

Prof. Alan Welsh
Australian National University
Selecting linear mixed models

Ric Coe
World Agroforestry Centre
Option x Context interaction and design of multi-environment trials

Registrations and abstracts open 1 June 2013

CONFERENCE LOCATION

Mandurah is located 72 kilometres south of Perth on the edge of the Peel-Harvey estuary, an idyllic inland waterway of over 130 square kilometres, twice the size of Sydney Harbour, and blessed with abundant marine life and natural beauty. Recently declared Australia's fastest growing regional destination, the coastal town of Mandurah has become a vibrant tourist attraction with a multitude of activities and entertainment throughout the year. It has delightful restaurants and cafes, crystal clear blue water, and an abundance of activities for the whole family, Mandurah makes for a great getaway!

CONFERENCE VENUE

The conference will be held at **The Sebel Mandurah** which is located on the stunning Mandurah Estuary with spectacular water views and close to the attractions of Mandurah.

TRAVEL & ACCOMMODATION

Travel options from Perth to Mandurah will be publicised on the conference website at the time of registration

SOCIAL PROGRAM

A conference is not complete without the opportunity to socialise and network with colleagues, providing a break from the more formal parts of the program.

A welcome reception and conference dinner will be the main social functions. In addition one afternoon will be set aside for local sight seeing and other activities.

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!

25% SSAI Member Discount Promotion with Wiley

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Register on the SSAI/Wiley Landing Page and from then on you can purchase Wiley books at the 25% discount without use of a Promotional Code. For those members outside of Australia and New Zealand, please use the Promo Code SDP92 at checkout to activate the 25% discount. Members who registered on the Wiley site before the SSAI link was available may encounter problems when trying to get the discount. To get the 25% discount these members unfortunately need to register using another email address.

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Toll free phone (from New Zealand only) 0800 448 200
Other overseas phone + 61 7 33548455

E-mail: custservice@johnwiley.com.au

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.

CPD43: ADVANCED ANALYSIS OF LINKED DATA COURSE

25-29 September 2013, Flinders University, Adelaide
Presenter: Professor David Preen, UWA.

Abstract

This is an intensive five-day course on the theory and practice of the analysis of large sets of linked health and social data at an intermediate to advanced level. Health researchers are given the opportunity to build on their pre-existing theoretical knowledge and skills in the analysis of linked health data by exploring a number of advanced theoretical topics.

Workshop participants will benefit from the presenter's unmatched level of theoretical expertise and real-world experience in linked data methodology and research technique, as developed and used by researchers from the UWA School of Population Health since 1995.

Course Outline

The curriculum has a robust, modular structure, whereby each day of material deals with a theme that is developed in a staged sequence:

i) relevant theory;
ii) technical principles needed to translate the theory into practice; and
iii) hands-on computing exercises where participants apply their newly-acquired knowledge to the analysis of fictitious but realistic linked health data sets.

The module topics covered throughout the five-day course include:

Module 1: Principles of advanced linked data analysis

Module 2: Clinical population dynamics using linked data

Module 3: Complex longitudinal designs using linked data

Module 4: Case distribution designs using linked data

Module 5: Risk modification and adjustment using linked data

About the Presenter

Professor David Preen is the Director of the Centre for Health Services Research at the School of Population Health, The University of Western Australia (UWA). He is involved with conducting public health and health services research using linked health and human services data on national priority areas such as: i) medication safety and pharmaco-epidemiology, ii) chronic disease management, iii) delivery of cancer services, iv) health of marginalised populations, and vi) methodological advances using medical record linkage.

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- Advise on the completion of the claim form
- Provide advice to ensure you have received your full entitlements.

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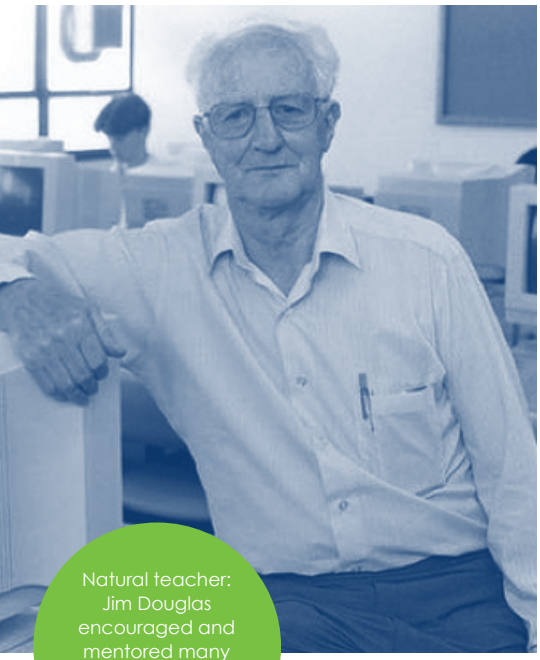
INSURANCE ADVISERNET

JIM DOUGLAS, 1923-2013



Natural teacher: Jim Douglas encouraged and mentored many university students. Photo: UNSW Archives

Jim Douglas was a leading figure in statistics education in Australia. He spent almost all his working life at the University of NSW after being appointed a lecturer in mathematics there in 1947, shortly before it opened formally as the NSW Institute of Technology in 1949.

In those early days, the UNSW focused on offering courses in engineering, applied science and commerce. Douglas' gift was the rare combination of academic excellence, deep administrative insight and a caring interest in those around him.

With these qualities, he led the development of statistics courses attuned to the needs of the applied science and engineering departments and established undergraduate courses in theoretical statistics, leading ultimately to a full honours program in the early 1960s. UNSW was only the second Australian university to have such a program and Douglas also pioneered a masters by coursework program in statistics.

Douglas' view of statistics was that it should solve problems arising in other disciplines and that the subject itself was strengthened and enriched by such applications. He welcomed collaboration with scientists and engineers and gave unstintingly of his time. His network of contacts and the support of his statistical colleagues facilitated considerable cross-disciplinary research. At the same time, he maintained research into his own speciality, culminating in the publication in 1979 of his comprehensive book *Analysis with Standard Contagious Distributions*.

Douglas was a natural teacher. A former student wrote: ''Jim stood out among the teachers we knew for his deep commitment to his calling as an educator and for his genuine interest in our intellectual maturation.''

Douglas encouraged, mentored and supervised many honours and postgraduate students and his influence continues through them. He also established an industry-based University Statistics Advisory Panel and it was through this and other industry contacts that he was able to introduce holiday employment schemes for statistics students. This substantially influenced the career paths of some students.

Statistics is about using data to make decisions in the face of uncertainty. This always requires computation and Douglas pioneered the integration of computational techniques into statistics courses, at first with mechanical calculators, later with computers.

Beyond the university, Douglas took an active role in three professional associations, the Statistical Society of Australia, the Australian Mathematical Society and the Biometric Society. He served for many years on the NSW Secondary Maths Syllabus Committee. In 2002 the SSA created the JB Douglas Postgraduate Award for the best research student presentation at an annual colloquium.

Douglas was awarded life membership of the SSA in 1983, made a fellow of the AMS in 1994 and awarded the degree of Doctor of Science honoris causa by the UNSW in 2003. He formally retired in 1983 as associate professor, but continued to be intellectually active in the university for almost 30 years until shortly before his death.

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James Bartram Douglas was born on April 14, 1923, in Heidelberg, Melbourne, to Ern Douglas, a grain merchant, and his wife Ivy. After going to school in Coburg, he became a student teacher and was headmaster of one-teacher schools in country Victoria from the age of 18 (during World War II). Scholarships led him to Melbourne Teachers' College then the University of Melbourne. In 1951, he married Alma Frank, a psychology lecturer.

A favourite recreation was camping in national parks. The vehicles of choice were a 1930s Riley, which Douglas also drove to the university, and a Model B Ford tourer. The latter, with Jim and Alma in the front and the rear piled high with their children, camping equipment and the cat and dog, was a memorable sight. In later life, Alma developed dementia and was cared for by the family until her death in 2007.

He is survived by children Alan and Jan, son-in-law David, daughter-in-law Tracey and grandchildren James and Emma.

Charles McGilchrist

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This reprint was generously sponsored by Datalytics (Michael Adena).

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.

Last year the SSAI 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 2014.

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.

For more information or to apply, please contact the SSAI Office (eo@statsoc.org).

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.

Congratulations to the winner of the 2012/13 SSAI Golden Jubilee Travel Grant

Garth Tarr,

member of the NSW Branch.

Garth is currently in his final year of PhD candidature. The grant will go towards his expenses for attending the International Conference on Robust Statistics (ICORS) which will be held from July 8 to July 12, 2013 in Saint Petersburg, Russia (http://onlinereg.ru/icors2013). ICORS has been an annual international conference since 2001. The aim of the Conference is to bring together researchers interested in robust statistics, data analysis and related areas. This includes theoretical and applied statisticians as well as data analysts from other fields, and leading experts as well as junior researchers and graduate students.

Walter+Eliza Hall
Institute of Medical Research

8 May 2013

Media Release

Australian statistician elected Fellow of the Royal Society

Walter and Eliza Hall Institute researcher Professor Terry Speed has been elected as a Fellow of the Royal Society, the UK's national academy promoting excellence in science.

Professor Speed's election recognises his contributions to the field of bioinformatics research, using mathematics and statistics to solve complex biological problems.

The Royal Society has announced that, this year, 44 new fellows have been elected from the UK and Commonwealth countries, including four Australians. New fellows are selected on the basis of their scientific achievements by existing fellows of the society.

Professor Speed has developed new ways to analyse biological data that have been applied to medical research in a range of fields including cancer, infection, immunology and inherited diseases. He now heads the Walter and Eliza Hall Institute's Bioinformatics division, and also leads a research group at the University of California at Berkeley, US.

Professor Speed said he was honoured to be elected to the society. "I am delighted to see the Royal Society recognise the field of statistical bioinformatics," he said.

"I want to pay tribute to my many students, postdocs, bioinformatics colleagues and biological collaborators. Without them, I would have done nothing. Further, my wife Sally's love and support over the past 50 years has been essential," Professor Speed said.

Professor Doug Hilton, director of the Walter and Eliza Hall Institute, said Professor Speed had made many significant contributions to biomedical research and mathematics during his career. "In the past 20 years, the field of genomics research has generated vast amounts of information that can only be interpreted with specially designed techniques," he said.

"Terry has been one of the leading figures in the field of genomics. As well as being an outstanding mathematician, he has forged close collaborative links with biomedical scientists to ensure his work has immediate relevance to biological problems. I am delighted that his peers in the Royal Society have recognised the importance of his research achievements."

Professor Speed has received many awards during his scientific career, including the 2012 Victoria Prize, the inaugural National Health and Medical Research Council (NHMRC) Achievement Award for Excellence in Health and Medical Research in 2007, an NHMRC Australia Fellowship in 2009, and the Australian Government Centenary Medal in 2001.

For more information contact Vanessa Solomon, Communications Adviser, on +61 3 9345 2971, +61 431766715 or solomon@wehi.edu.au

PROFESSOR PETER HALL ELECTED AS FOREIGN ASSOCIATE OF NATIONAL ACAEMYOF SCIENCES

Professor Peter Hall, from the University of Melbourne's Department of Mathematics and Statistics, has been elected to the prestigious US-based National Academy of Sciences (NAS).

The NAS has announced the election of 84 new members and 21 foreign associates from 14 countries in recognition of their distinguished and continuing achievements in original research.

Foreign associates are nonvoting members of the Academy, with citizenship outside the United States.

The NAS is a private, non-profit society of distinguished scholars. Established by an Act of Congress, signed by President Abraham Lincoln in 1863, the NAS is charged with providing independent, objective advice to the nation on matters related to science and technology.

Scientists are elected by their peers to membership in the NAS for outstanding contributions to research.

Professor Hall is a world-leading researcher in probability and mathematical statistics.

He is one of the most prolific and highly cited people in this field with more than 500 research papers and four monographs.

In 2011 Professor Hall received his fourth Australian Research Council (ARC) fellowship – a Laureate Fellowship, to develop important advances in statistics, leading to new statistical methodologies.

Professor Hall's early work was in fundamental probability theory resulting in three monographs, the first being the widely used Martingale Limit Theory and its Applications.

He has made important contributions to the study of spatial processes and stochastic geometry including the book An Introduction to the Theory of Coverage Processes.

Silvia Dropulich

Published with the kind permission of the University of Melbourne, Melbourne Research.

Marie-Louise Rankin

FROM THE SSAI OFFICE

We are now in the final stages of implementing the new website design and SSAI has been advised that the new website should go live on 10 June 2013. Before this can happen, a lot of work still needs to be done, both by the design company and by me, but I have had several sneak previews of the new website, and I can't wait for 10 June to come!

Level 91 – Cloud Computing have started to train me on the new website. I quickly found that updating or creating new pages seems much easier with the new website than with the old one. Another aspect I found particularly helpful is that from now on I will be able to give out log-in details myself to any branch or section representatives given the task of updating their respective web pages. Until now I always had to go through LCubed or Netagi to request login details.

By the time I write my contribution for the September newsletter, I should be able to tell you much more about the new website and how you can set up your personal pages to get the most of your membership with SSAI.

Marie-Louise Rankin

SA BRANCH

A Comparison of Group-based Trajectory Modelling Methods

Chris Davies is a PhD Candidate in Statistics at the University of Adelaide and is also a Senior Statistician at the Data Management & Analysis Centre in the Discipline of Public Health at the same university. At the March meeting of the SA Branch Chris gave a talk on group-based trajectory modelling methods which have been applied to childhood behaviour data.

The Generation 1 longitudinal study of 557 South Australian children was established in 1998. Mothers were recruited in early pregnancy and they and their children have been followed-up regularly throughout the child's infancy and childhood to early adolescence. Childhood behaviour has been measured using the Achenbach Child Behaviour Checklist (CBCL). The CBCL records the parent's views on over 100 specific behavioural, emotional and social problems. Each item is reported to be not true (0), somewhat true (1), or very true (2). For this research data concerning externalising childhood behaviours (e.g. aggression, bullying or delinquency) was used.

When an attribute is measured longitudinally in a population, sometimes the paths of measurements followed by individuals, or trajectories, are similar to one another. However, for certain characteristics distinctly different trajectories are shown by subpopulations. Chris described two main group-based trajectory modelling methods which have been proposed to estimate these subpopulations, namely latent class growth analysis (LCGA) and growth mixture modelling (GMM). The LCGA model can be expanded in various ways to model more complicated relationships among longitudinal variables. GMM is a group-based trajectory modelling method that combines elements of LCGA with hierarchical growth modelling within each group. The inclusion of

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random effects in GMM results in a more general model than LCGA. An issue highlighted by Chris is the method used to select the number of groups. For mixture modelling, the Bayesian information criterion (BIC) is commonly used to compare between models.

Chris' work compared the suitability of the LCGA and GMM models for modelling the childhood behaviour data. GMM was found to perform well for data simulated from both LCGA and GMM, whereas LCGA was satisfactory only for data simulated from LCGA. In terms of the bias and variance of the parameter estimates, similarly GMM performed well for both types of data, whereas LCGA only performed well for LCGA data. Chris noted that care is needed when fitting LCGA models to data which may contain more variability than is explained just by the mean trajectories of the groups. In this situation, many observations will be assigned to the incorrect group and the appropriate number of groups according to the BIC will be overestimated.

Future work will compare alternatives to GMM and LCGA for estimating trajectories. Once the trajectories have been characterised, the extent to which early life variables are able to predict the behaviour trajectories will be investigated. The behaviour trajectories will also be used to predict later developmental and educational outcomes.

The talk generated discussion on the treatment of missing data, incentives for tracking study participants over time, and the use of cubic models. It was noted that these methods are applicable to other fields of study such as Alzheimer's disease where researchers are following trajectories, but have additional complication that the start point (onset) is not known. There was some discussion on how statistical packages such as Mplus incorporate growth mixture models by treating everything as a latent variable. GMM can be coded in Mplus, while LCGA can be coded in SAS and Mplus.

Paul Sutcliffe

VIC BRANCH

Confidence sets for variable selection

Figure 1

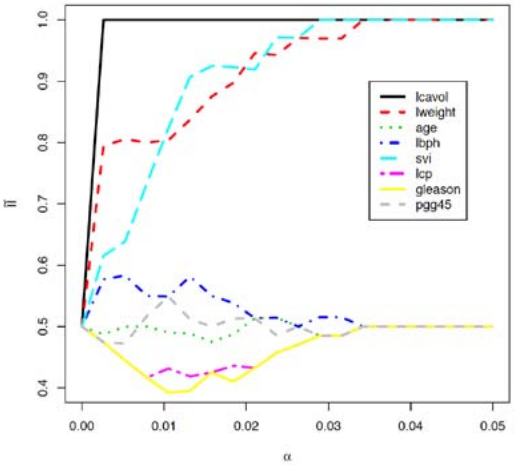
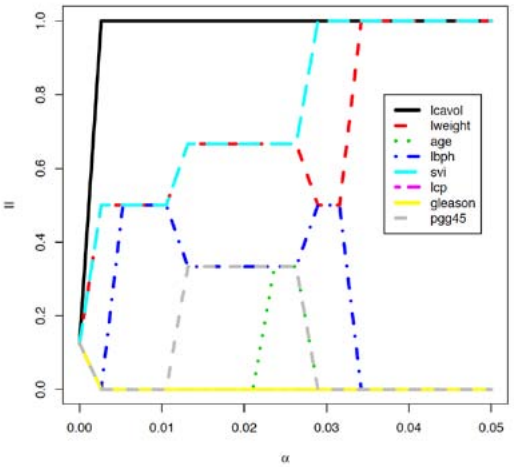


Figure 2



The March seminar for the Victorian Branch was given by University of Melbourne researcher, Davide Ferrari on "Confidence Sets for Variable Selection", a novel approach to the issue of variable selection, based on joint work with Yuhong Yang.

Davide opened the seminar by describing a statistical model as a story about how data might have come about and model or variable selection as the search for the most plausible story. Sometimes this process is easy and the answer is obvious whereas other times there are many competing, plausible stories.

Davide noted that there exists a vast array of approaches to this question in the linear regression setting, including information-theoretical approaches and penalized likelihood approaches. Using the prostate cancer study of Stamey (1989) as an example, he noted that these approaches often disagree over which variables ought to be included. Methods exists which "average" across these models, but Davide was critical of these as they often result in a loss of information about individual predictors, as well as relationships between predictors and can result in unreliable inference.

It is in this setting that Davide introduces the idea of a Variable Selection Confidence Set or VSCS, analogous to confidence intervals for parameter estimates. Again, focusing on the linear regression setting with all subset models considered, he sets out to find a confidence set of models such that the probability that the true model is in this set is greater than (1-α). Using F-testing to compare each possible model with the full model, such a set (called the Exact Confidence Set or ECS) is constructed containing all models that survive the F-test. Obviously the full model is always contained in this set.

Davide discussed some theoretical properties of the ECS assuming normal errors, including its exact coverage probability of 1-α and the tendency for the set to contain a large number of models. In fact, when there are no conditions on the magnitude of coefficients of the predictors, the ECS must include large models. Davide also demonstrated that if the true model has sufficiently strong predictors, then the ECS has asymptotic detectability (i.e. as the number of observations grows the chance that it contains the true model approaches 1).

Of particular interest in this area is a subset of lower boundary models or LBMs. An LBM is a model for which there is no model in ECS that is nested within it. There can of course be many of these for a given ECS, and the set of these models can be shown to include all the variables in the true model with probability 1, as the number of observations increases. The size of the set of LBMs can also be informative in terms of the strength of the model and the confidence we can have in the importance of the predictors; the smaller the set, the stronger the model and our confidence. A useful index for this is the multiple explanation index (MEI) or the log of the size of the set and the relative inclusion importance of a predictor can be given as the number of times it appears in the set of LBMs divided by the number of size of the set and can give a ranking of predictors. These quantities have good asymptotic properties.

Returning to the prostate cancer study, Davide gave examples of the LBMs and inclusion importance of the 8 parameters, alongside the results of existing approaches. These are given in Table 1. The profile of the predictors in the full ECS and the set of LBMs are given in Figures 1 and 2, each plotting the

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Figure 3

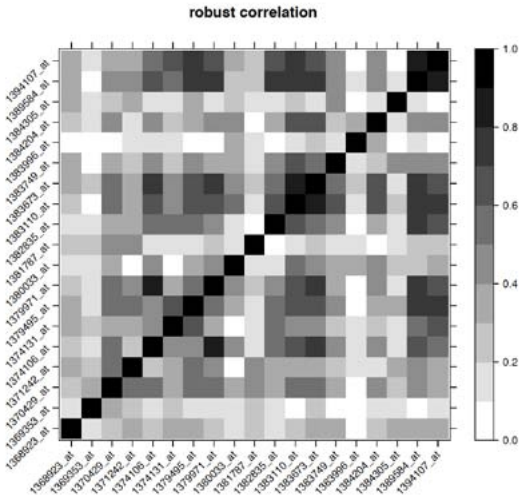
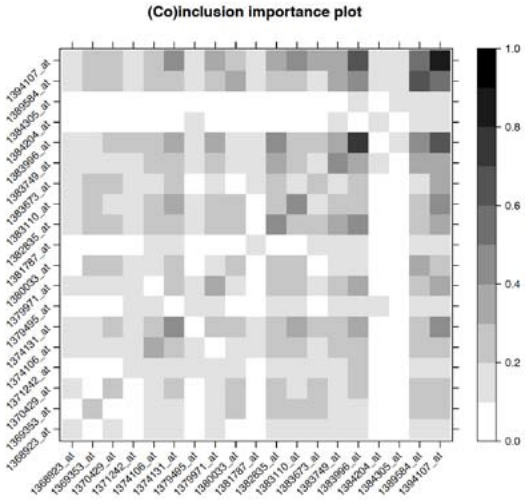


Figure 4



relative inclusion importance against the choice of α. Seemingly unimportant predictors are included in half of the ECS as α increases.

Davide used microarray data set from Sheetz et al. (2006) to demonstrate predictor co-importance, that is, which pairs of predictors are often together in an LBM model. These data also provided Davide with a chance to discuss a major limitation with the approach at present: the inability to handle the p>n case, due to the requirement to assess all subsets of the full model individually. In this instance, some initial screening of predictors was used to reduce the number of parameters, p, to 200. Of these, 19 predictors were contained in the LBM set. Figure 3 gives the overall correlation between the predictors and Figure 4 gives the co-inclusion importance for each pair. These two things should be largely independent, though it is of particular interest to relate these and note any deviations.

Davide concluded the talk with some simulation results for a range of correlation and noise levels, which indicated that the LBM set size increases with increasing noise but not substantially. The introduction of correlations alters the importance of individual predictors, as might be expected. He also noted that these methods easily extend to the case of generalised linear models where a α2 statistic can be used in place of the F test to determine inclusion in the ECS.

There was some healthy discussion after the talk, including the suggestion that these methods ought to be compared with other incidence measures such as those obtained from support vector machines or random forests, in addition to the variable selection methods compared in the talk. This is something which Davide intends to pursue in the future, along with the expansion of these methods to better handle the computation challenges of larger numbers of predictors. A solution may be found in the use of test statistics for high-dimensional regression coefficients such as those used by Zhang and Chen (2011).

The seminar was preceded by the Victorian Branch AGM.

Sandy Clarke

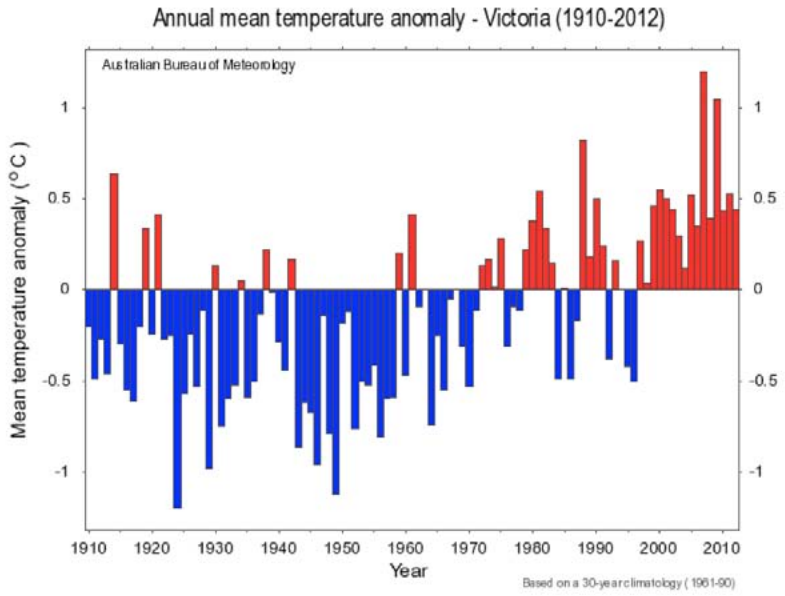
Table 1

	α = 1.0%			α = 5.0%					
Term	LBM		II	LBM	II	AIC	BIC	Lasso	Scad
cavol	1	1	1	1	1	1	1	1	1
lweight	1	0	0.5	1	1	1	1	1	1
age	0	0	0	0	0	1	0	0	0
lbph	0	1	0.5	0	0	1	0	1	1
svi	0	1	0.5	1	1	1	1	1	1
lcp	0	0	0	0	0	0	0	0	1
gleason	0	0	0	0	0	0	0	0	0
pgg45	0	0	0	0	0	0	0	1	0

Detecting climate change

Blair Trewin, from the Bureau of Meteorology in Melbourne, gave a talk entitled '*Detecting climate change using real observations, real instruments and real people – how estimating trends is sometimes the easy part*.'

As part of its research programme into climate change, the Bureau of Meteorology constructs time series for a number of climate variables, such as temperature rainfall and sea temperature, for Australia and various regions of Australia. These time series are available on the Bureau of Meteorology website (http://www.bom.gov.au/climate/change/index.shtml#tabs=Climate-change-tracker&tracker=time-series). An example is the average annual temperature time series for Victoria.



Blair's talk was restricted to time series for temperatures, including for daily average, average minimum temperature and average maximum temperature. These time series are constructed using data from weather stations around Australia. These weather stations were set up for the purpose of providing good weather forecasts, and not for the purpose of monitoring changes in climate.

The most naïve approach to constructing a temperature time series is to simply average the data from all available weather stations in Australia. If we do this, the time series shows an artefact of a strong cooling trend over time. This is because, over time, more weather sites from mountain and alpine areas have been added to the network.

Thus to provide a reliable temperature time series, we need to take into account that the geographical distribution of weather stations has changed over time. It is also necessary to account for time biases caused by changes in circumstances of weather stations at the same centre (e.g. town). These circumstances include;

- The weather station site moves (e.g. from town post office to town airport)
- The weather station instruments or housing have changed
- The environment around the site has changed (e.g. new buildings have made the site more protected)
- Observation procedures have changed.

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Blair Trewin

The general approach is to obtain a set of 112 weather sites for which reliable data (sometimes after correction for temporal bias) can be obtained for at least a number of decades. This excludes sites in major cities, so as to minimise bias from the 'urban heat' effect. From each of these weather sites a time series is constructed in a way that (a) extends the time series back to 1900 using neighbouring weather stations with somewhat similar weather patterns, and (b) corrects for biases due to time changes in the circumstances of the weather station. Annual, seasonal or monthly readings are then averaged with geographically distributed weightings.

Much of Blair's talked described techniques to estimate, and in some cases identify, biases due to time changes in the circumstances of the weather station. The basic approach is to compare the records from a site with other relatively close sites with similar weather patterns. This is much easier when there is a clear change in circumstance, such as a movement of the weather station from a town post office to an airport, or a change in housing of the weather station. In some cases changes in circumstances can only be identified by statistically comparing the temperature records with a suite of nearby sites. When overlapping records are available, these are used.

The overall outcome is time series, expanding over 100 years into the past, that are believed to have good reliability in detecting systematic changes in temperature.

Kym Butler

NSW BRANCH

Experiences from the Young Statisticians Conference 2013

The Young Statisticians Conference 2013 was a vibrant, informative and eventful meeting held at the University of Melbourne in February 2013. It was a great opportunity for me to participate in the conference and present my PhD research work. The comments and suggestions by the fellow students and renowned statisticians added great value in shaping the future direction of my work, as well as organizing my future presentations. The conference itself was well organized and spanned throughout the time frame with number of guest speeches, student presentations and poster sessions. It was a great occasion for many of us in the early years of a career in statistics to meet up with some of the leading figures in the academic and industry sectors, as well as to get together and share research experiences with fellow young statisticians.

Furthermore, the two-day R workshop, which was held before the conference was an invaluable program to understand some of the key concepts and further expand the knowledge of its computing capabilities. Thus, it was a great value addition. Finally, the conference dinner took place at a tranquil atmosphere just beside the Yarra River and was a spectacular event that gave us the opportunity to make new friends as well as to relax and have fun.

All up, it was a remarkable experience for me in many ways and I'm immensely thankful to the SSAI NSW branch in providing me the necessary funds to attend YSC 2013.

Madawa Priyadarshana Weerasinghe Jayawardana Rathambalage
PhD Student

The prospect of presenting at the YSC 2013 excited me for so many reasons. It was my first presentation as a PhD student, the first one outside my country of birth and another first was, both me and my husband presenting at the same conference. The conference had a large number of participants including seven students from our own University of Sydney. Amongst other things my experiences at the conference could be summarised as follows:

The participants included many students, researchers and professional statisticians from various regions within Australia as well as from different parts of the world. It provided a good platform for networking with likeminded people (ie. love for statistics) to whom I could relate well in terms of research, as well as for sharing knowledge and work related experiences. The session chairs were very meticulous in conducting the sessions. Hence, it was a good learning experience on time management and helped to focus on the key points/ findings of my research that was shared with the target audience.

Moreover, each presentation and interaction with an audience helps to boost one's confidence in public speaking. In that respect too, I value the experience I got in presenting at the YSC 2013 apart from the useful feedback I got with respect to my presentation in terms of questions and comments from the audience. On the other hand, I was able to learn from other participants' presentations as well, on presentation skills as well as the material that were presented.

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During the conference, there were around six very interesting and useful speeches by distinguished professionals in the field, who imparted their valuable knowledge and experiences. In particular, I would like to mention Professors Peter Hall and Rob Hyndman, who provided extremely useful advice and insights to current and future postgraduate students of statistics as key note speakers. Overall, the experience I gained as a participant helped me to expand my learning curve and was able to enhance my statistics / econometrics knowledge by participating in this memorable event.

Last but not least, I would like to congratulate the organisers for a job well done and I take this opportunity to thank SSAI for granting me the travel sponsorship for which I am very grateful. Wish SSAI and the YSC good luck in all future endeavours!

Rasika Yatigammana
PhD Student

The SSAI Young Statisticians Conference that was held in Melbourne from the 7-8th of February, 2013 was a terrific occasion for most young statisticians like me. It was indeed a memorable occasion, since we met and came across eminent scholars in statistics such as Professors Peter Hall, Rob Hyundman, Ray Chambers etc. Furthermore the experiences that I encountered at the conference are as follows:

1. I was able to meet a cross section of statisticians from various disciplines/ countries, and we were able to network well.
2. The conference was organized well.
3. The venue of the conference was a very convenient, central location in Melbourne and happened to be an ideal academic environment.
4. The session chairs were very prudent in terms of the timing of presentations.
5. Obtained useful feedback with respect to my presentation from established experts in the research subject area.
6. The keynote speakers were excellent with Peter Hall and Rob Hyndman's presentations noteworthy.
7. Overall, it was a great experience and a tremendous learning endeavour and will always be one of my most memorable academic career events.

My earnest hope is that SSAI NSW Branch will support other eligible young statisticians like me in the future to attend conferences of this nature, since it will enable them to broaden their horizon in terms of statistics. In conclusion I would like to thank the SSAI NSW Branch for supporting me to attend the Young Statisticians Conference 2013 in Melbourne.

Gnanadarsha Sanjaya Dissanayake
PhD Student

April Meeting - Alex Holcombe

The April meeting featured a talk by Alex Holcombe, an ARC Future Fellow in Psychology studying the limits of perception and attention, who spoke however about a general issue in science, the ``Replicability Crisis''.

The starting point of his talk was a discussion of various forms of publication bias that the traditional approach to journal publication has led to. In particular, it is inordinately difficult to publish work which attempts to replicate, with a view to verifying or perhaps challenging the results in other notable works; attempts to verify are deemed not original enough, while attempts to challenge often meet resistance in one form or another, often because the author of the original work under scrutiny is chosen as a referee. Also experimental results which do not produce ``statistically significant'' results are much harder to publish. This has various follow-on effects: many well-designed experiments with important scientific value go unreported and younger researchers make important decisions about future directions of research based on how easy or difficult it might be to publish the results, rather than on pure scientific interest or value.

To try to redress this imbalance Alex has embarked upon a bold new initiative as an editor of the journal Perspectives on Psychological Science: Registered Replication Reports. This system is designed to encourage scientists to conduct experiments which aim to replicate results that appear in other works. The system is as follows:

1. Authors plan a replication study
2. They submit an Introduction and Methods section
3. These are sent to reviewers, including the author of the to-be-replicated article
4. The editor decides whether to accept/reject, based on:
   * Review comments regarding the proposed protocol
   * The importance of the original study, judged by argument in the introduction, number of citations of the original article and reviewer comments.
5. The Introduction, Methods and analysis plan and reviewer comments are posted on the journal website
6. After the results come in the authors submit a conventional results and discussion section

and that, together with the raw data form the full publication.

The idea is to encourage more replication. Aside from being a sound scientific principle (as quoted in a second grade textbook: ``Experiments should be performed more than once'') replication has an important role to play in detecting academic fraud: ``Because scientists are always repeating each other's experiments, it is hard for a fictitious result to hang on for very long''.

The talk was very well-received, provoking an extended discussion among the statistical scientists in the audience and continuing on to a Thai banquet in Newtown afterwards.

Michael Stewart

Lancaster Lecture: Alan Welsh

The Lancaster Lecture for 2013 was delivered by Professor Alan Welsh from ANU, recent recipient of the Pitman Medal. The statistical topic area of his talk was the analysis of compositional data, where each datum is a vector of proportions. As usual Alan presented descriptions of quite technical ideas in a clear and laid-back way, including discussion of cocktails and paint mixtures and even some home-made props to illustrate aspects of the geometry of simplices.

It became clear though that these aspects of compositional data were being presented to the audience just so they could appreciate the main part of the talk, namely a detailed exposition of a particularly fiery academic rivalry between the Aitchison school on the one hand and Watson and Phillips on the other, a battle that raged in the Geology literature through the 1980's and 1990's.

Aitchison proposed a suite of methods based on log-ratios which were shown to have certain desirable properties. However a strange combination of strength of personality and sheer weight of numbers meant that these desirable properties came to be regarded as essential requirements of any method. Thus anyone who proposed a competing method that didn't tick all of Aitchison's boxes was only able to present their work in a deferential apologetic manner. Worse, any who tried defending their contrary alternative methods with any vigour faced a barrage of rather personal attacks in letters to the editor. A terrific example was a letter to the editor of Mathematical Geology titled ``Delusions of Uniqueness and Ineluctability''. Alan took great joy in giving us various other examples of Aitchison's thinly-disguised vitriol, vividly coloured by the use of similarly archaic, obscure but nonetheless cutting language. In all, the talk presented a very interesting example of pure science being somewhat hamstrung by the force of ego. It was very insightful and entertaining.

Michael Stewart

Alan welsh