



75 years of statisticians in CSIRO



Dinner Speakers Terry Speed (left) and John Field (right) with Murray Cameron (centre), Chief of CSIRO Mathematical and Information Sciences

At a dinner in Canberra on 27 September 2005, CSIRO paid tribute to the seventy fifth anniversary of the appointment of its first statistician, Frances Elizabeth "Betty" Allan.

The dinner featured talks by John Field of BiometricsSA on the life of Betty Allan, and Terry Speed of WEHI and UC Berkeley on the expansive topic "Mathematics, Statistics, Biology: Past, Present and Future".

Born in 1905, Betty Allan studied pure and mixed mathematics at Melbourne University, completing both bachelors and masters degrees and winning scholarships and honours throughout.

In 1928 she took up a CSIR studentship for "the study of statistical methods applied to agriculture", studying at Newnham College, Cambridge and then working at Rothamsted Experimental Station with RA Fisher. Fisher described her as having "a rare gift for first-class mathematics".

On 29 September 1930, Betty Allan was appointed to the then-CSIR Division of Plant Industry in Canberra to apply statistical

methods to agricultural research. Her projects included control of oriental peach moths and blowflies, work on plant diseases and noxious weeds, and studies of the effects of supplements on sheep.

"Betty Allan's statistical work pushed CSIR's agricultural science to new heights – training scientists, designing reliable experiments and extracting important information," said Dr Murray Cameron, chief of CSIRO Mathematical and Information Sciences. "After she retired in 1940 following her marriage, CSIRO formally established a Biometrics Section, forerunner to the present-day CSIRO Mathematical and Information Sciences."



Betty Allen

More information: www.cmis.csiro.au/stats75

Andrea Mettenmeyer

In this issue

Data Linkage Symposium	2	President's Corner	5	Three Doors	10
SBI Conference	3	Bayes for Beginners Workshop	6	Martin Esteban Donadio 1973-2005.....	12
Editorial.....	4	Named Lectures	9	Branch Reports.....	14

Symposium on data linkage

On Tuesday 9 September 2005 a 'Symposium on Data Linkage' was held at the Australian National University (ANU) in Canberra. The event was organised by the Canberra Branch of the SSAI and the School of Finance and Applied Statistics, ANU. About 75 persons from all over Australia, and one from New Zealand, came together to participate in the symposium which ran all day and involved eight speakers. Data linkage is a rapidly growing area in statistics and involves combining two or more sets of data so as to maximise the use of the available information.

After an introduction by Glenys Bishop, the first speaker, Agnes Walker of the National Centre for Epidemiology and Population Health (NCEPH) at ANU gave a talk titled 'Building datasets using many sources: What are researchers allowed – and not allowed – to do in Australia and overseas?'. Agnes noted that to address a range of policy-relevant issues in research projects a single data source is rarely sufficient. However use of multiple data sources, while often fraught with difficulty, can lead to superior results if researchers persevere with imputation or statistical matching. The difficulty in Australia has arisen, in part, from the inability to use a unique person identifier to link various data collections, for example the Medicare card number to link various administrative health datasets. In some other countries, such as in Scandinavia, datasets in which all government information has been directly linked across individuals through a unique identifier are available to researchers. Agnes presented examples from her own research in which the use of imputation and statistical matching across several data sources has led to superior results. One involved the use of Australian Bureau of Statistics (ABS) survey data in combination with administrative Pharmaceutical Benefits Scheme (PBS) data to show that PBS medicine costs were a considerably greater financial burden for Australia's poorer families than for the rest of the population.

The second presentation, given by Di Rosman of the WA Department of Health and Chris Kelman of NCEPH and ANU, was on the topic of the Western Australian Data Linkage System (WADLS). This System links seven core WA population health datasets with more than 12 clinical and health service data sets. Recently, Commonwealth Medicare Benefits Scheme (MBS), PBS and Aged Care data have been included. The WADLS is built on the concept of a

dynamic linked chain of health events, ordered by date. Each linked chain can be broken at any point and new links can be inserted or existing links deleted as new information becomes available. Chains can be extended further into the future or the past as new health events are discovered. The WADLS now covers health services for around 1.7 million individuals, making it one of the world's largest and most comprehensive linked data resources. Around 250 research papers have been published based on the WADLS. Di, whose talk was titled 'WA Data Linkage System' presented a summary of the system design and development, contributing data sources and a summary of the research outputs generated over the WADLS's 10 year history. Chris, whose talk was titled 'National data linkage with privacy protection' then elaborated on some aspects of the WADLS, in particular privacy issues, comparison with similar systems abroad, and the additional value provided by incorporating links to the Commonwealth MBS, PBS and Aged Care datasets. At the end of the Symposium, Di also presented a short informational DVD on the WADLS.

Peter Christen of the Department of Computer Science at ANU gave an impressive talk on 'Recent developments in data linkage technologies'. He began with a brief historical tour of data linkage, from the early seminal thinking of Fellegi and Sunter nearly 40 years ago, to the modern day approaches of machine learning and attribute recognition models. Hidden Markov models, originally developed for speech pattern recognition, are among the techniques being used for segmenting names and addresses into fields for data cleaning and standardisation. Blocking, an old technique used in data linkage for reducing the number of candidate matches, is being replaced by more sophisticated techniques, such as 'fuzzy' blocking and sorted neighbourhood approaches. Linking records using probabilistic matching typically classifies potential matches into three categories: matches, non-matches and possible matches. Resolution of the possible matches is typically done through clerical review; however, this can be time-consuming and error-prone. More details can be found at <http://datamining.anu.edu.au/linkage.html>

How well can one expect to match records when names and addresses are not available on one or both sets of records? In a talk titled 'Feasibility of a no-name linkage strategy: A game of

chance?', Rose Karmel of the Australian Institute of Health and Welfare (AIHW) explored this problem in the context of linking hospital records for persons 65 and over with residential aged care records. The interface between acute hospital care and residential aged care has long been recognised as an important issue in aged care services research. If records can be matched using only date of birth, gender, region and relevant event dates, social researchers can begin to piece together patterns of movement between hospital and aged care services. Rose used Poisson models and some simplifying assumptions on birthday distributions to estimate the probability of a chance match, and the likely false match rate. She showed that, under reasonable assumptions, when records are blocked by region, date of birth and sex, the Australian overall false rate is likely to be very low, so that a no-name matching strategy is feasible. In a joint project with the Western Australian Data Linkage Unit (WADLU), Rose is currently engaged in comparing links established between hospital and residential aged care records using her no-name strategy with name-based links obtained by the WA DLU where names and addresses were available in both sets of records for the linkage process.

After lunch, Bruce Fraser of the ABS presented a talk titled 'Gaining community acceptance for data linking projects', in which he gave a compelling case for making privacy and confidentiality management visible to key stakeholders, and also to the community. He has witnessed a certain level of mistrust expressed in the media and echoed in the public regarding initiatives that might make it easier to link records and build integrated information systems. He outlined information privacy principles that should be considered before undertaking research involving linking records. Bruce urged all of us as researchers to carefully weigh the potential benefits of public health and welfare research against the potential risks to privacy, to identify clear research objectives likely to serve the public interest, to engage at an early stage with key stakeholders, and to be prepared to adopt practices which ensure that the privacy of individuals is not breached.

Christine O'Keefe of Mathematical and Information Sciences at CSIRO next presented a talk titled the 'Queensland Linked Data Set (QLDS) project: A data linkage study'. The QLDS was made available to CSIRO under an agreement between Queensland Health (QH)

and the Commonwealth Department of Health and Ageing (DoHA). This data set contains patient level hospital separation data, Medicare claims data and PBS data, all from 1995 to 1999. All data were de-identified, and actual dates of service were removed, so that time sequences were indicated by time from first admission. This process provided strong privacy protection consistent with relevant Federal and State legislations. The QLDS provided a unique demonstration resource to assess the utility of examination of 'whole of health system' costs, service levels and outcomes; and it has been extensively analysed over nearly four years by researchers from CSIRO, DoHA and QH.

The final speaker at the symposium was Ross Sparks of Mathematical and Information Sciences at CSIRO in Sydney, with a talk titled 'Selection bias, information loss and inference with linked data sets'. Whenever data sets are linked using the 'intersection principle', there is a potential for significant information loss and selection bias, and Ross illustrated this with several simple examples. He then made the point that while the alternative 'union principle' may often be impossible due to data size restrictions, it does allow a superior handling of the missing values problem, and is typically subject to less selection bias. Finding something of a half-way house between the intersection and union approaches may be an important avenue for future

research. Ross stated that it is essential to assess selection bias in any data linkage and advocated a number of diagnostic tools and tests for doing so. Some of these are simple and should be routinely carried out; for example, comparing the linked data distribution to its source data set distribution using q-q plots, and examining multi-way tables for selection bias. Ross also discussed the additional complexity in analysis created when joins are not perfect and probabilistic matching is necessary. He emphasized the need for quality statistical input throughout the entire data linkage process so as to ensure valid inferences at the end of the day.

Borek Puza, Terry Neeman and Brent Henderson

SBI Conference

The fourth conference of the ISI's Statistics, Business and Industry Committee (SBI) was held immediately after ISI from 11-13 April 2005. The conference was held at the Palm Cove Novotel resort just north of Cairns (see <http://www.action-m.com/isbis4>). It was probably a combination of the attraction of Tropical North Queensland and the excellent promotional work of the Scientific and Organizational Committees that resulted in 150 attendees, three quarters from overseas.

The conference focussed on important statistical issues relating to productivity improvement, improved use of quantitative methods to support decision-making at all levels of business and industry, and statistical aspects of finance. Needless to say its importance and relevance to the real world resulted in a number of high-profile statistical and business speakers. Topics covered included:

- Design of Experiments
- Process Control
- Reliability
- Six Sigma and Other Quality Management Paradigms
- Case Studies and Novel Statistical Applications
- Information Technology and Network Modelling
- Software Engineering
- Financial Statistics
- Chemometrics
- Pharmaceutical Statistics
- Large Data Sets in Business and Industry
- New Developments and Applications in Data Mining and Machine Learning
- Risk Analysis and Management
- Market Research



Milena Zeithamlova (Principal, Action M Agency) and Monika Jandova

The plenary sessions included presentations by John Laker (Chairman, Australian Prudential Regulatory Authority), David Hand (Imperial College), Tim Davis (*Ford Fellow*, Ford Motor Company) and a very interesting session where speakers from a cross section of statistical backgrounds spoke for five minutes each on the subject of "Industrial Statistics – Challenges for the 21st Century". The conference was preceded by a well-attended one-day workshop on *Data Mining: Methods and Applications in Insurance and Finance*, conducted by Jerry Friedman and Glenn Stone.

Edited versions of some of the conference papers will appear in a Special Issue of the journal *Applied Stochastic Models in Business and Industry*, with Dennis Lin as Guest Editor.

An important function of the conference was to kick-start the new International Society on Business and Industrial Statistics (ISBIS), which was founded during the Sydney ISI in April (see <http://www.cbs.nl/isi/isbis.htm>). The objectives of the ISBIS are:

- To promote the advancement and exchange of knowledge in business and industrial statistics
- To build international collaboration among statisticians and users of statistics working in business and industry
- To build international collaboration among statisticians and users of statistics working in business and industry
- To exchange ideas and information at an international level through conferences, workshops and publications
- To encourage links between statisticians from developing and developed countries
- To develop and promote relationships among national and regional professional societies or groups involved in activities related to business and industrial statistics.

Generous support by the Queensland Government and CSIRO enabled attendance of a number of young statisticians, who participated enthusiastically in all aspects of the conference.

The conference was superbly run and the professional conference organizers (Action M Agency) who were all the way from the Czech Republic are to be congratulated. Nick Fisher (Conference Director) and Vijay Nair (who unfortunately had to cancel at the last minute) also did a fantastic job in constructing and organizing the scientific program.

Emlyn Williams



PO Box 5111,
Braddon ACT 2612
Phone (02) 6249 8266
Fax (02) 6249 6558
Email: admin@statsoc.org.au
Society Web Page
<http://www.statsoc.org.au>

Editors

Alice Richardson, School of ISE,
University of Canberra,
PO Box 1, Belconnen ACT 2616

Michael Adena, Covance Pty Ltd
PO Box 5125, Braddon, ACT 2612

Correspondence

Please direct all editorial correspondence
to Alice Richardson.
Email: newsletter@statsoc.org.au

Disclaimer

The views of contributors to this
Newsletter should not be attributed to
the Statistical Society of Australia, Inc.

Subscriptions

The Newsletter of the Statistical Society
of Australia is supplied free to all
members of the society. Any others
wishing to subscribe to the Newsletter
may do so at an annual cost of A\$30.00
for an issue of four numbers.

Advertising

Advertising will be carried in the
Newsletter on any matters which the
Editors feel are of interest to the members
of the Society. For details of advertising
rates, etc. contact the SSAI Executive
Officer at newsletter@statsoc.org.au

Printer

National Capital Printing
22 Pirie Street, Fyshwick ACT 2609

**DEADLINE FOR
NEXT ISSUE:
10 FEBRUARY 2006**

Editorial

Sometimes it seems as though sport is simply a mechanism for generating statistics, and when the sport in question is the cricket being played in England, there are sleepless nights as well! A series of cricket games played between Australia and England took place between the previous issue of the newsletter and this one. While I will not be making any comments about the statistics generated by the game, I was intrigued by one particular commercial that cropped up frequently during my evening's watching.

The Institute of Chartered Accountants' "Rocket" commercial depicted a rocket that was unable to take off due to the absence of numbers needed for the countdown. The punchline of the commercial was "Chartered Accountants: Number One in Numbers".

Two thoughts came to my mind. Firstly, I thought statisticians had a monopoly on the use of the space shuttle to showcase what their professional advice can do. Not any more! Secondly, I wondered what a similar commercial for statisticians might be like. If you have ideas, or if you would like to see the Society pursue this form of advertising, please contact us. The newsletter has a new email address, newsletter@statsoc.org.au, and the Editors welcome correspondence at this address on topics of interest to members of the Society.

As for the timelines for seeing your contributions in print, please update your diaries with the new newsletter publication schedule beginning in 2006. The new deadlines for copy will be the 10th of February, May, August and November. The Editors are looking forward to bringing you information-filled issues, but we rely on you to provide much of the material!

Finally, the Editors would like to take this opportunity to wish all members of the Society a happy and safe Christmas.

Correction:

In the August 2005 issue the photographs on page 3 of presenters at the 2005 Young Statisticians Workshop were reversed. The photograph on the top left hand side of the page is Greg Peterson and the photograph at the bottom right hand side is Daniel Schubert.

Professional Development Opportunities by SSAI

A Workshop on the R System, hosted by the SSAI Victorian Branch, will be held in Melbourne on 23-24 November 2005.

The R system provides, straightforwardly, well-designed publication-quality plots that can include mathematical symbols and formulae. While the user has full control when required, careful default graphical design choices keep user intervention to a minimum.

John Maindonald (Centre for Bioinformation Science, Mathematical Sciences Institute, ANU) will present the workshop.

For registration and workshop information visit: http://www.statsoc.org.au/Branches/VIC/SSAI_Vic_R_workshop.pdf

Introduction to R, hosted by the SSAI Western Australian Branch, will be held in Perth on 30 November and 1 December 2005.

The course will consist of an alternating series of lectures and computer practicals that will allow participants to immediately try out what they have learned in lectures. The course is designed for those who have had little or no experience with R but who would like to learn more.

The course will be presented by Martin Hazelton and Berwin Turlach from the School of Mathematics and Statistics at the University of Western Australia.

For registration and workshop information visit:
<http://www.maths.murdoch.edu.au/ssawa/>

President's Corner

Thanks to Neville Bartlett

I am most honoured to follow Neville Bartlett as President of SSAI. I know that you will join with me in thanking him for his contribution during the past two years. He has been very active in this role and injected quite a different perspective on the way things are done.

As will be noted elsewhere, the formal way in which the Presidency changes in SSAI ensures a very smooth transition process. The member elected as Vice President serves a term of four years. In the first year they are the President-Elect; they then serve for two years as President, and then a further year as Vice President. As they are on the Executive Committee for the full period, they can learn from the President and pass on their knowledge to the President-Elect. Neville has been particularly helpful to me and he has my heartfelt appreciation for his continued forbearance.

Reviews

The SSAI review of Statistics at Australian universities is nearing completion as members of the Review Team prepare the final version of their report. A number of people commented on the first draft of the report and these comments were passed on to the Review Team along with those from the steering group. A final report is expected in the next few weeks and will be available in hard copy and electronic form.

The Australian Mathematics Society is conducting a review of Mathematical Sciences in Australia with sponsorship from the ARC. This review is expected to take place in February and March of 2006 and further details can be obtained from <http://www.austms.org.au/AustMath/StratRev/stratrev.html>.

Election of Executive Officers of the Society

Members of the Statistical Society of Australia Inc are advised that the terms of the Vice President (Neville Bartlett), Secretary (Doug Shaw) and Treasurer (Stephen Horn) expire at the Society's Annual General Meeting to be held in July 2006.

The member elected as Vice President serves a term of four years. In the first year they are the President-Elect; they then serve for two years as President and then a further year as Vice President. The member elected to this office cannot seek re-election. The Secretary and Treasurer serve a term of two years, and may be re-elected.

The Society has a Nominating Committee, consisting of the Executive Officers and the Presidents of the Branches. The Nominating Committee presents Central Council with no more than three candidates for each of the positions to be filled. Nominations are sought from

the Branches for consideration by the Nominating Committee.

The Society's Rules provide for any member of the Society, or any Branch Council, to make a nomination to any member of the Nominating Committee for any of the positions to be filled. The Rules set a deadline of January 31, 2006 for such nominations to be made. Earlier nominations would assist the Nominating Committee in its work. Contact information for Branch Presidents can be found at: <http://www.statsoc.org.au/branches>

The Society's Rules currently stipulate that, if a ballot is necessary for any of the positions, that ballot is conducted amongst the members of Central Council. The Society is considering Rule changes to broaden the ballot process for subsequent elections.

Doug Shaw
Secretary

SSAI is assisting this review with a financial contribution of \$5,000.

Applications Editor

As the term of the current Applications Editor of the *Australian and New Zealand Journal of Statistics*, Russell Millar, will finish at the end of this year, a call for expressions of interest from members of SSAI and NZSA will soon be circulated electronically. I'll formally thank Russell for his valued contribution in due course.



Comment on relevant public issues

The question of SSAI commenting on relevant public issues was discussed at a recent Executive Committee meeting. It was decided that it is appropriate for the society to do so, provided that sufficient time is allowed for the Executive to determine a suitable subcommittee to formulate a response which can subsequently be approved for release. This can be achieved by e-mail correspondence, but would probably still need a lead-time of 3-4 weeks. Requests to the President or Executive Officer for consideration of an SSAI position on a relevant public issue could originate from any member. The Executive reserves the right to not make a formal comment.

Kaye Basford
E-mail: k.e.basford@uq.edu.au

Conferences

Fifth International Symposium on Business and Industrial Statistics
11-13 January 2006, Lima, Peru
www.stat.vt.edu/isbis5

ASC/NZSA 2006 Statistical Connections
3-7 July 2006, Auckland, New Zealand
www.statsnz2006.com

8th Australasian Conference on Mathematics and Computers in Sport
3-5 July 2006, Coolangatta, Queensland
Contact: jhammond@scu.edu.au

ISI2007, Lisbon, Portugal
<http://www.ine.pt>

Bayes for Beginners workshop

The SSAI SA branch organised a 2-day workshop on October 4th & 5th for Professor Kerrie Mengersen to present her "Bayes for Beginners" course which was similarly organised in Perth during 2004. The workshop was held at The University of Adelaide Waite Campus, a pleasant location in the Adelaide foothills.

The response to the workshop was excellent, 36 participants came from near and far - Queensland, New South Wales, Victoria and locally in South Australia. Participants came from various universities such as The University of Adelaide, Flinders University, University of South Australia, Macquarie University, and Monash University as well as a range of private and government organisations such as BearingPoint Australia P/L, Colmar Brunton, CMAX, CSIRO and ABS.

SSAI SA branch also provided two student grants to Jason Ellul (honours student) and Brian Webby (PhD student) from The University of Adelaide to attend the course and learn Bayesian statistics and software such as WinBUGS for potential components of their research and for their own professional development.

The workshop was run in a computer laboratory over the two days in which Kerrie gave lecture and practical sessions which flowed seamlessly. The participants were able to interact with Kerrie and each other in a supportive environment which provided greater opportunity for participants to learn.

Kerrie is currently Professor of Statistics and Acting Director of the Science Research Centre at QUT. She has a strong background in computational Bayesian statistics as shown by her research activities in theoretical and applied aspects of Markov chain Monte Carlo and novel methods for data mining, environmental modelling and medical research.

Kerrie began the course discussing the basics of Bayesian inference using decision trees and the fundamental Bayes rule. She then moved onto building Bayesian models and showing how the choice of prior such as non-informative prior or conjugate prior influences the posterior distribution. Kerrie went on to illustrate an example of combining prior information such as ICU mortality models from APACHE III that was based on 17000 patients from 40 US hospitals and combine it with local data which had 5000 admissions to PAH from 1995-

1999. The Bayesian model combining the APACHE III and local data was then a better predictive tool of deaths in ICU.

Kerrie introduced Bayesian computation using Markov chain Monte Carlo (MCMC) simulation methods. She introduced MCMC algorithms such as Gibbs sampling and Metropolis-Hastings which was followed by participants attempting some examples in WinBUGS software. Some further topics Kerrie discussed were hierarchical and mixture models which participants attempted themselves and various tools to determine an appropriate model using Bayes Factor and the Deviance Information Criterion.

Final discussions in the workshop that were raised were diagnostic tools

that could be used such as Convergence Diagnostics (CODA) software to support the Bayesian models and other facilities in WinBUGS that would allow more control when modelling. Kerrie finished off emphasising that Bayesian techniques are most useful to deal with complex modelling.

The SSAI SA council would like to take the opportunity to thank Kerrie for her efforts during the 2-day workshop and to all participants who were involved that made it a success.

Feedback from the attendees showed a strong desire for more workshops on a range of different areas.

Janine Jones



Workshop attendees (L-R) John Field, Janine Jones and Paul Eckermann

Member News

The following is reprinted from the Amstat News (July 2005) – congratulations Simon.

Simon J Sheather has been named head of the Department of Statistics at Texas A&M University. Sheather began his term on March 1, 2005. He comes to us from the Australian Graduate School of Management at the University of New South Wales in Sydney, Australia, where he served as the head of the Statistics and Operations Group and as the Associate Dean of Research. A few of Sheather's awards include ranking among the top 200 mathematicians worldwide, receiving the inaugural AGSM Award for Excellence in Research, and receiving the AGSM Alumni Association Award for Excellence in Teaching. Texas A&M University and the Department of Statistics enthusiastically welcome Sheather as the new department head.

2006 Membership Renewals

Renewal invoices will be sent to all members in early December.

An early-bird discount applies for members who renew before 1 February 2006.

ACSPRI SHORT COURSES IN RESEARCH METHODS
2006 ACSPRI SUMMER PROGRAM
AUSTRALIAN NATIONAL UNIVERSITY, CANBERRA 16-27 JANUARY 2006

The Australian Consortium for Social and Political Research Inc. was formed in 1976 as a national organisation of member institutions to enhance the use of machine-readable data. In support of its objectives, ACSPRI offers courses in research methods and research technology designed to serve a wide variety of needs for training and professional development within the academic, public and private sectors.

ACSPRI (5-DAY) COURSES

WEEK 1: 16-20TH January 2006

- * Introduction to Qualitative Research Techniques
- * Intro to Social Network Research & Network Analysis
- * Introduction to Statistics
- * Intro to *NVivo*: computer-assisted qualitative data analysis
- * Fundamentals of Multiple Regression
- * Factor Analysis
- * Data Analysis using *Stata*
- * Applied Structural Equation Modelling
- * Measurement in the Psychosocial Sciences: from raw scores to rasch measures.

WEEK 2: 23-27TH January 2006

- * Focus Groups and Other Qualitative Group Techniques for Research, Evaluation and Planning
- * Data Analysis in *SAS*
- * Data Analysis in *SPSS*
- * Qualitative Research: Design, Analysis & Representation
- * Applied Multiple Regression Analysis
- * Time Series Modelling
- * Introduction to Structural Equation Modelling (*LISREL*)
- * Introduction to Structural Equation Modelling (*AMOS*)
- * Practical Multilevel Analysis using *MLwiN* & *LISREL*

ACSPRI Programs have earned a high reputation for presenting a practical and applied approach to research methods and data analysis, promoting hands-on learning opportunities, and using highly skilled and experienced instructors.

5-DAY COURSE FEES (GST INCLUSIVE)

ACSPRI Member: \$1260* (early-bird fee: \$1150)

Non-member: \$1750 (early-bird fee: \$1630)

* Full-time PhD students studying at ACSPRI member institutions may be eligible for a substantial early-bird discount (all early-bird course fees must be paid **in full** on or by closing date of **8 December 2005**). See the ACSPRI website for details.

FURTHER INFORMATION, COURSE APPLICATION FORMS AND ON-LINE BOOKINGS

ACSPRI: Tel: 02 6125 2200; Fax: 02 6125 4722

Website: www.acspri.org.au

Email: acspri@anu.edu.au

Australian and New Zealand Journal of Statistics

I am taking this opportunity to introduce myself as the new Managing Editor of the Australian and New Zealand Journal of Statistics. The journal is what we make of it, so I invite you to consider ANZJS as the first avenue for the dissemination of your frontier research and novel applications in statistics.

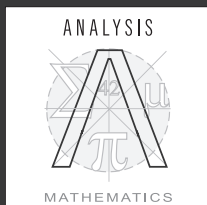
In 2006, as part of your SSAI membership you will have access to both online and hard copy versions of the journal. An upgraded online delivery of full text and pdf versions will be available. Remember that non-subscribers can also make one-off purchases of articles of interest.

If you require further information about online access to ANZJS, please visit the journal website or contact Blackwell's Customer Service officer, Ms Lei Hattori; email lei.hattori@blackwellpublishingasia.com phone (03) 8359 1014.

In order to better plan for 2007 onwards, you will be asked as part of your 2006 membership renewal whether you would prefer to receive the journal online only.

Please feel free to email me directly at k.mengersen@qut.edu.au with comments or suggestions about our journal. I would also be pleased to hear from you if you are interested in contributing as an Associate Editor or reviewer.

Kerrie Mengersen, Managing Editor



STRATEGIC
INFORMATION
CONSULTANTS

SSAI 
Statistical Society of Australia Inc.

Have you recently begun working as a statistician and would like to attend the Australian Statistical Conference in 2006? Do you need some financial assistance to get there?

The upcoming Australian Statistical Conference (in conjunction with the New Zealand Statistical Association Conference) will be held at SKYCITY Convention Centre in Auckland from 3-7 July 2006.

Data Analysis Australia has a sponsorship pool of \$2,500 to provide travel and accommodation support to statisticians working in Australia who have graduated within the last 5 years and would like to attend the 2006 conference.

The conference is a fantastic opportunity for statisticians new to the profession to:

- Meet with other people at a similar stage of their career as well as highly experienced statisticians.
- Build professional networks.
- Make and develop friendships.
- Keep abreast of statistical developments and research within Australia and New Zealand.
- Discuss your own work and get some ideas or thoughts from other statisticians who may be able to help you.

To find out more about the conference please visit www.statsnz2006.com.

If you would like to be considered in obtaining some financial assistance to attend the conference please send a 1-2 page response addressing the following points:

- A summary of where you have worked as a statistician, what this work has involved and how long you have been working as a statistician.
- Why you would like to attend the conference and how you feel attending the conference will help you in developing your career.
- A copy of your CV including proof of formal qualifications.
- Names and contact details of 2 Professional Referees.
- What other financial support (if any) would be available to you to attend the conference.

Successful applicants will be required to provide a report on return which may be reproduced in the Data Analysis Australia or Statistical Society newsletters and/or websites.

Special consideration may be given to those statisticians who are working in organisations where they may not have the opportunity to meet with many other statisticians and could benefit most from the networking opportunities available at the conference.

Please send your application to:
Statistical Society of Australia Inc.
PO Box 5111
Braddon ACT 2612
or to admin@statsoc.org.au

Applications close Friday 24th March 2006

If you have any enquiries please contact:
Jane Waslin (02) 6249 8266 admin@statsoc.org.au
Neville Bartlett 0412 399 239 neville@nrbartlett.com.au
Anna Munday (08) 9386 3304 anna@daa.com.au

www.daa.com.au www.statsoc.org.au

Named Lectures, 2005

Foreman Lecture by Dennis Trewin

The Foreman lecture is one of the Canberra Branch's two named lectures and is held in odd-numbered years within the branch; the ABS sponsors a speaker at the ASC in even-numbered years. The lecture is named in honour of Ken Foreman and the enormous contribution he made to the survey sampling community over many years, particularly at the Australian Bureau of Statistics.

This year's Foreman lecture was given by Dennis Trewin, the Australian Statistician, and was particularly fitting because it coincided with the centenary year of the Australian Bureau of Statistics. Around 60 members attended the meeting at ABS House and listened to Dennis speak of those 100 years and the development of the statistical methods during that time.

Dennis structured the talk into 4 main sections where he spoke about the developments during the pre World War II phase, the Foreman era, the post Foreman era and the future.

In the pre World War II period Dennis listed George Knibbs' book on the "Mathematical Theory of Population", the development of the balance of payments and the creation of the first research officer as major advances.

Dennis noted that the Foreman era saw a great many methodological developments, including the introduction of social surveys, generalized survey systems, quality control procedures, seasonal adjustment, post-enumeration surveys, synchronized sampling and the quarterly labour force study.

The period after Foreman was recognized for the methodological developments in things like the integration of survey designs, the use of tax data, the introduction of time series methods, forms design, the notion of 'Total Survey Design', improved editing systems and the creation of the 'Analysis' branch.

Dennis discussed the immense benefits realized from the overall investment in methodological developments.

The talk concluded with a look to the future methodological challenges that Dennis saw on the horizon. Those challenges included the emergence of new statistical outputs (like environmental data) and the unique sampling methods they demand, the extraction of data from large databases, data linkage, provision of confidentiality, internet and web-based surveys, small area statistics, greater use of analytical or model-based approaches and the combination of survey and management data.

The first discussant, Professor David Steel from the University of Wollongong, focused on the future methodological developments. He thought that there was likely to be a greater need for methods to combine data, protect confidentiality, improve analytical outputs and to allow the adoption of common frameworks. He also emphasized the critical role the ABS has in developing and supporting the statistics discipline, and suggested that there was a need for a co-ordinated approach with other organizations.

Dr Trevor Breusch from the School of Economics at the Australian National University was the second discussant and brought the perspective of a regular user of ABS data and statistics. He offered a number of useful comments and suggestions for improved information delivery into the future.

This was one of the best attended meetings in recent times. A lively dinner followed at the popular Turkish Pide House in Jamison.

Brent Henderson

Cornish Lecture by Kerrie Mengersen

The South Australian Branch began a series of public lectures on statistical topics of broad interest in 2001. The lecture series has been named after Alf Cornish, a leading figure in the early years of the statistical profession in Adelaide. The lectures are held every two years and are presented by eminent statisticians from around the world. The speaker for the 2005 Cornish Lecture was Kerrie Mengersen, Professor of Statistics and Acting Director of the Science Research Centre at the Queensland University of Technology. The title of her talk was 'Making Decisions Based on Data (and Other Sources of Information): A Bayesian Perspective'.

The general Bayesian approach is to combine the data (represented by the likelihood function) and a prior belief about the parameter of interest (prior distribution) to tell us something about the parameter, given the data (posterior distribution). An advantage of using the Bayesian approach to analysis is that we often have some knowledge about the situation before we begin data collection and it seems sensible to use that information, together with the information contained in the data, in order to say something about the parameter of interest.

One of the many situations where Bayesian analysis is useful is in developing a predictive model for the risk of experiencing an adverse event, based on the value of a number of predictor variables. If the event is rare, it would be difficult for example, to develop a model which gives meaningful predictions for Australians using Australian data only. However, if a large amount of data was available for another country such as the USA, this information could be used to give the prior distribution and then Australian data could be used to update the prior (i.e. produce an updated risk of experiencing the adverse event).

One challenge in the Bayesian setting is choosing a suitable prior distribution. The chosen prior could be vague or could be chosen based on data from a previous study or expert opinion. In the latter case, the challenge is to elicit useful prior information from the expert. One approach is to ask them to comment on what they would expect the outcome to be if a number of predictor variables took specified values or how they would expect the outcome to change as one of those predictor variables changed. However, the expert may find it easier to represent their knowledge graphically. This is particularly relevant in the prediction of areas where a rare species of animal may be present for example, as an expert may be able to use a map to show where they would and would not expect to find the animal.

The talk concluded with a lively discussion about prior distributions. Kerrie was then presented with a bottle of South Australian wine in appreciation for her efforts in running the 'Bayes for Beginners' workshop and presenting the Cornish Lecture.

Thank you

The Statistical Society of Australia would like to thank the following organisations for their continued support during 2005:

- ❖ Australian Bureau of Statistics
- ❖ Covance
- ❖ CSIRO

And also the many members who serve on the Society's various committees at branch and national level to ensure a strong future for the organisation.

Three Doors with Borek Puza (Edition 4)

Welcome to the fourth edition of *Three Doors*. In the last edition I presented The Nine Number Puzzle and subsequently received four correct solutions, these being from Ken Brewer, Terry Neeman, Janice Wooton and one W.S. Gossett. With witnesses Michael Martin, Steve Roberts and Tim Higgins present, I rolled 4 on a die and thereby declared the winner as W.S. Gossett. Unfortunately there was no other identifying information on the paper with that name which had been slipped under my door, and so the hunt for its true author began. At first it was suspected that he or she was a 'student', but at last the joker was found, and I am pleased to announce Steven Stern as the second winner of the Three Doors prize, again a \$60 dinner voucher. Both prizes this year have been kindly donated by the Canberra Branch of the SSAI. Below is the puzzle and its solution. The next puzzle follows.

The Nine Number Puzzle

You are about to play a game in which 9 numbers will be randomly drawn from between 0 and 1 (uniformly, independently, and one by one). Just after observing each number, you must either accept or reject it, but you may accept only once. The accepted number will be multiplied by 1000 and you will win that number of dollars. Find your maximum expected gain and describe the corresponding optimal strategy.

Solution to The Nine Number Puzzle

Let n be the number of numbers drawn and suppose that n equals 2 (rather than 9). Then clearly you should accept the 1st number if it exceeds $1/2$, and otherwise you should accept the 2nd number. By the law of total probability, your expected gain is then $(1/2)(3/4) + (1/2)(1/2) = 0.625$ (the average of the expected value

of the 1st number given that it exceeds $1/2$, namely $3/4$, and the expected value of the 2nd number, namely $1/2$).

Now suppose that $n = 3$. Then you should accept the 1st number if it exceeds 0.625 , and otherwise you should reject it and adopt the optimal strategy for the case $n = 2$. Your expected gain is then $(1 - 0.625)(0.625 + 1)/2 + 0.625(0.625) = 0.69531$ (a suitably weighted average of the expected value of the 1st number given that it exceeds 0.625 , namely $(0.625 + 1)/2$, and the expected value for the case $n = 2$, namely 0.625).

Next suppose that $n = 4$. Then you should accept the 1st number if it exceeds 0.69531 , and otherwise you should adopt the optimal strategy for the case $n = 3$. Your expected gain is then $(1 - 0.69531)(0.69531 + 1)/2 + 0.69531(0.69531) = 0.74173$.

Obtained by continuing iteratively in the above fashion, the following table shows the maximum expected gain $e(n)$ for each n from 0 to 9. These gains follow the insoluble quadratic recurrence equation $e(n) = (1 + e(n - 1)^2)/2$, where $e(0) = 0$. We see that for any $n > 0$, the optimal strategy involves accepting the 1st number if it exceeds $e(n - 1)$ and otherwise adopting the optimal strategy for the case $n - 1$.

n	0	1	2	3	4	5	6	7	8	9
$e(n)$	0	0.5	0.625	0.69531	0.74173	0.77508	0.80038	0.82030	0.83645	0.84982

Thus, for the case $n = 9$ you should accept the 1st number if (and only if) it is greater than 0.83645 , accept the 2nd number if it is greater than 0.82030 , accept the 3rd number if it is greater than 0.80038 , accept the 4th number if it is greater than 0.77508 , accept the 5th number if it is greater than 0.74173 , accept the 6th number if it is greater than 0.69531 , accept the 7th number if it is greater than 0.625 ,

accept the 8th number if it is greater than 0.5 , and otherwise accept the 9th and last number. Your expected gain will then be 0.84982 , i.e. \$849.82.

It is interesting, as pointed out by "W.S. Gossett", that the optimal solution is not the "intuitively reasonable answer" of accepting the k th number if it exceeds the expected maximum of the remaining $9 - k$ numbers, namely $(9 - k)/(10 - k)$. This naive strategy yields an expected gain of only \$842.84. It should also be noted, as was done by Ken Brewer, that the variance of the gain increases rapidly towards the end of the game. This means that "a risk-averse player playing the game only once would be well advised to adopt a conservative strategy" and be prepared to accept numbers substantially below the above optimal cutoffs, in order to avoid the possibility of ending up with a reward considerably below \$849.82.

The Chess Puzzle

At a university, 128 students are about to play in a knockout chess competition. The first round consists of 64 games, with the winners progressing to the second round of 32 games, and so on, until an overall winner is declared following the 7th round. In case of a draw the game

is replayed until someone wins. If the 128 students are all of equal ability and pairing is random at each round, find the probability that the two oldest students will play against each other at some stage of the competition.

For your chance to win a fabulous mystery prize, send your most elegant solution to newsletter@statsoc.org.au

Looking for a job?

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

<http://www.statsci.org/jobs>

With 307 specialist positions listed last financial year.

Do you have a job to advertise on the website?

Email a position description to mrobinson@wehi.edu.au. Listing is free!

This service is proudly brought to you by the





Undergraduate Students

Are you a Statistical student wanting to attend the Australian Statistical Conference 2006?

The Statistical Society of Australia Inc (SSAI) in conjunction with the New Zealand Statistical Association Conference will be held in Auckland 3-6 July 2006.

CSIRO Mathematical and Information Sciences has a pool of \$4K to contribute to students who need some financial assistance to attend the conference.

If you would like to be considered in obtaining some financial assistance to attend the conference please forward a 1–2 page document addressing the selection criteria.

Selection Criteria:

- What would be the value to you, both short term and in your developing career, to attend the conference?
- Which aspect of the conference is most interesting to you?
- What is the level of assistance required?
- Provide 2 professional referees.

You will also be required to provide a Report/Seminar on return to your individual department, CSIRO to receive a copy.

Please send your application, addressing the Selection Criteria together with your CV and transcripts or your academic results to:

Executive Officer,
Statistical Society of
Australia Inc, PO Box
5111, Braddon ACT 2612

**Applications close
Friday 24 March 2006**

**Applications close
Friday 24 March 2006**

Should you have any enquires please contact Ms Julie Tesoriero, tel: (02) 9325 3157 or email: Julie.Tesoriero@csiro.au

www.cmis.csiro.au

www.statsoc.org.au

Martin Esteban Donadio, 1973-2005

The Statistical Society of Australia has lost one of its most active and enthusiastic younger members. Martin Donadio, a member of the Victorian Branch, was tragically killed in a traffic accident on August 25. Martin was highly regarded by all who knew him. He was vibrant, friendly and intelligent, and one of the chief architects behind the rebuilding of the Victorian Young Statisticians Group over the last few years. The SSAI extends its sympathies to Martin's family, friends and colleagues, and particularly to his wife, Natalie Karavarsamis.



Natalie, Ken Brewer (coauthor of a paper with Martin), Adam Thomas (a work colleague) and Brian Phillips (Victorian Branch President) share with us some recollections of Martin.

Natalie writes about the years between Martin's birth and their marriage.

Martin was born on 22 January 1973 in Argentina, in Arias, and grew up in Santa Eufemia, both small towns in the province of Cordoba. He completed his secondary studies at Liceo Militar Boarding School, and his undergraduate degree at the National University of Rosario (1991-1998, 5-year course, plus a research component of at least one year). In 1996 he moved to Buenos Aires to work at INDEC (National Institute of Statistics and Census), where he found a research topic and supervisor for his research component. He completed it whilst working there.

In February 2000 he came to Australia on a scholarship from the National University of Rosario to do a Master's degree at the Department of Mathematics and Statistics at the University of Melbourne. He transferred from a Master's by coursework (2000) to a Master's by Research (2001-2002) and submitted his thesis in January 2002. Whilst studying he worked as a tutor and examiner in the first year course on experimental design and data analysis. He also lectured for one semester at RMIT to third year students taking the linear models course, for which he wrote the notes as well as the examination paper. In the first half of 2002 he went to Canberra for 3 to 4 months, and in that same year he worked in the Statistical Consulting Centre at the University of Melbourne. Early in 2003 he started working for the ABS in Melbourne.

He chose to study in Australia over the USA and the UK because it was the country located furthest away from his, and therefore the most difficult of all three places to travel to – he had already visited the UK. He also chose Australia because it was 'exotic'. Primarily he came to study, but he also came for the 'life experience' (as he called it) of living in a different country and experiencing a different culture from his. Upon his arrival in late February 2000, and during the first weeks of lectures, we met and we were married on 6 December 2003.

Ken Brewer, who presented the eulogy at Martin's funeral, writes about Martin's time in Canberra.

Martin first contacted me by email from Melbourne in mid-2000, asking me to suggest some references to get him started on his Master's thesis. By September 15 he had most of what he needed, but there is then a gap in my email records until

6 July 2001, when he wrote in reply to my request for a summary of his project, which involved using Monte Carlo studies to estimate the variance of the Horvitz-Thompson estimator in many different ways and in a variety of situations.

From then on, our correspondence became steadily more frequent and less formal in tone. We became first co-operative researchers and then close friends. My usual role was to suggest variations on a promising class of estimators, and Martin would test them out. By mid-September 2001 we were also exchanging telephone calls. By late that month we were satisfied that we had found the best estimator in our class, and had established that it compared favourably with those in other classes.

Soon afterwards Martin visited Canberra for a week, two days of which we spent working together. As it happened, my daughter at that time needed a short S-Plus program to measure how well her Public Service inspection team was achieving its goals, and Martin wrote one for her. That was typical of his generous nature.

Martin also had an appointment as Visiting Fellow with the ANU's Centre for Mathematics and its Applications from 18 February to 24 June 2002, visiting Peter Hall. During that period Martin and I had the opportunity to work closely together on a joint paper, which eventually appeared in the December 2003 issue of *Survey Methodology*. Having an early version of it helped me to arrange a visit to the US Bureau of the Census, and several other centres of statistical activity in the US, over the Northern Hemisphere's summer of 2002.

Martin was an ideal co-worker; perceptive, diligent, invariably helpful in every way, and at the same time an agreeable and interesting companion. Outside of our statistical activities, we spent many happy hours together visiting places of interest in Canberra, bushwalking in the surrounding countryside, and simply relaxing in the evenings with family and friends. He would undoubtedly have made quite a name for himself, had he not been untimely taken from us. He is, and will continue to be, sorely missed.

Adam Thomas, who supervised Martin at the ABS in Melbourne, writes about Martin's time at the Bureau.

Martin worked at the Australian Bureau of Statistics from March 2003 to August 2005. Martin was recruited after having completed his Masters in Applied Statistics at the University of Melbourne. Prior to arriving in Australia, Martin had previous work experience in the Argentine Bureau of Statistics.

During his time at the ABS, Martin was involved in numerous projects including sample design work (for several service industry surveys and a trial into a 2-phase area based design for Agriculture surveys) and review of methods for improving imputation and estimation for ABS surveys. He will be remembered for his exceptional technical skills, having done a considerable amount of work looking at the application of complex estimation and replicated variance techniques to ABS surveys.

Society Secretaries

Central Council

President: Dr N Bartlett
Secretary: Dr D Shaw
Email: doug.shaw@csiro.au

New South Wales

President: Mr Alun Pope
Secretary: Dr Neville Weber
Email: neville@maths.usyd.edu.au

Canberra

President: Dr Brent Henderson
Secretary: Dr Ray Lindsay
Email: ray.lindsay@netspeed.com.au

Victoria

President: Dr Brian Phillips
Secretary: Dr Ann Maharaj
Email: ann.maharaj@buseco.monash.edu.au

South Australia

President: Ms Margaret Swincer
Secretary: Ms Janine Jones
Email: janine.jones@adelaide.edu.au

Western Australia

President: Dr Aloke Phatak
Secretary: Ms Jodie Thompson
Email: jodie@daa.com.au

Queensland

President: Professor John Eccleston
Secretary: Ms Helen Johnson
Email: h.johnson@qut.edu.au

Section Chairs

Statistics in the Medical Sciences

Mr Peter Howley
stph@hsrg.newcastle.edu.au

Statistics in the Biological Sciences

Dr Simon Barry
Email: simon.barry@brs.gov.au

Survey and Management

Dr Robert Clark
Email: rclark@uow.edu.au

Statistical Education

Dr Michael Martin
michael.martin@anu.edu.au

Statistical Computing

Associate Professor Kuldeep Kumar
Email: kkumar@bond.edu.au

Industrial Statistics

Mr Ross McVinish
Email: r.mcvinish@qut.edu.au

Young Statisticians

Ms Janice Wooton
Email: janice.wooton@abs.gov.au

Bayesian

Professor Kerrie Mengersen
Email: k.mengersen@qut.edu.au

Further contact details for
Society Secretaries and
Section Chairs can be obtained
by contacting the Society on
(02) 6249 8266

Martin is most recognised for his contribution towards progressing selection methods, having received an award from the ABS for his significant role in the redevelopment of synchronised selection programs and high quality client support. This work was an extension of Martin's Master's project. Martin's love of his work, and statistics as a profession, was demonstrated when he volunteered to attend the Annual Statistical Conference of SSAI in Cairns to present his work on the assumption that he would pay for the travel himself while the norm in the ABS is to seek corporate funding for such duty. ABS management was so impressed by his enthusiasm that they offered to fund his trip but due to work commitments he was later unable to attend. The paper he was due to present was entitled 'Maximising and minimising sample overlap using order sampling' and discussed how order sampling can be used to select two samples from the same population using two sampling designs with different stratification and inclusion probabilities.

Martin played a significant role in the promotion of statistics. He was an active member of the Young Statisticians group; presented information sessions to University statistics students; attended several University careers fairs to promote statistics as a career; presented statistical analysis courses to graduates at the ABS; and was an active contributor in internal workshops and methodological network groups of which he was a member. Martin attended the 55th Session of ISI in Sydney after winning the Denise Lievesley Award in recognition of his

work in promoting statistics amongst the younger generation.

Martin was highly regarded by all of his colleagues in the ABS. He was an extremely bright and talented statistician, with a professional attitude and a genuine interest in improving the quality of official statistics. To those who worked closely with Martin, he was a trusted friend and very well liked. His colleagues will always remember his caring nature; his willingness to help others and his genuine love of life.

Brian Phillips, President of the Victorian Branch of the Statistical Society of Australia, writes about an award that Martin received.

Professor Denise Lievesley, President-Elect of the International Statistical Institute (ISI), partially sponsored some Victorian Young Statisticians to attend the 55th Session of the ISI in Sydney, April 2005, through the Victorian Branch of the Statistical Society of Australia Inc (SSAI).

Martin Donadio was one of four young statisticians who received this award. His selection was based on a number of factors including: his pivotal involvement in the activities of the Young Statisticians of Victoria and the Victorian Branch of the SSAI; his help with the organisation of the Denise Lievesley Workshop on Improving Survey Data Quality; and his involvement in many other statistical society activities.

Martin was highly regarded by the Council members of the Victorian Branch of the SSAI. He was viewed as a future leader in the discipline and as an early career statistician with a desire to broaden his horizons. He was especially interested in the role of statistics on the world stage, and, in his typically gregarious and friendly manner, spent considerable time talking to Denise about her experience as an international statistician.



WESTERN AUSTRALIA

July 2005

Associate Professor Ken Harrison from Mathematics and Statistics at Murdoch University presented the July talk to the WA Branch of the SSAI. His talk was titled "Changes to Upper Secondary Level Education- What's All the Fuss About?". This talk was one of a continuing sequence of talks which Ken has given and is continuing to give in his role in the Curriculum Council WA, where he is the sole representative of the university sector (not just mathematics). He explained that the need for change to the WA education system dates back to 1996 and is summarised in documents that have filtered through since (see, for example, "Our Youth, Our Future, Curriculum Council WA 2002).

Ken then described the key objectives of the new system and the major milestones of its introduction. Outcomes based education (OBE) was introduced for years K-10 about 7 years ago, and will be gradually phased into years 11 & 12 over the next few years. It was originally planned to introduce the new mathematics courses into year 11 in 2007,

but this has since been delayed until 2008.

Ken then described the new courses of study in mathematics, the processes leading to their creation, and their implications for tertiary studies. He then described what he saw as serious flaws in the courses. These included the lack of breadth of each of the three courses when taken in isolation, the vagueness and inappropriateness of the course objectives, and the severe difficulties teachers were likely to face when assessing student achievement against these objectives. He also pointed out that the representatives of university mathematics departments on the reference group that produced the new courses were unanimous in their opposition to the mathematics courses in their current form. With regard to the last point it was noted that there was no one from the SSAI nor any statistician was on the mathematics reference group, even though the Maths Association WA was represented, along with government agencies and education/school reps.

The three mathematics courses proposed for Year 11/12 in Western Australia are:

- Mathematics of Number and Change (equivalent to Calculus)

- Mathematics of Chance and Data (Statistics)
- Mathematics of Space and Movement (Trigonometry and Geometry).

One of Ken's points was that students will be pressured to follow one course of study, and hence gain a very narrow exposure to mathematical ideas. He also alluded to the ideas of essential content for courses like probability and statistics with the comment that generally too much was packed into the syllabus.

Fortunately there will still be the opportunity for submissions relating to the new mathematics courses during the formal consultation phase in 2006.

I (Brenton Clarke) as VP and Chair of the meeting extracted some views on statistics education in schools from various sources, including the United Kingdom Report "Making Mathematics Count" by Professor Adrian Smith; Helen MacGillivray's article in the May issue of the SSAI Newsletter; and a recommendation from the Draft of the SSAI Review of Statistics at Australian Universities. The discussion was then thrown open to the meeting. It was noted that the SSAI Review of Statistics was directed at university education though the impact of school level education



3-7 July 2006 Auckland, New Zealand

Hosted By

The Statistical Society of Australia (SSAI) and The New Zealand Statistical Association (NZSA).

Contact Details

ASC/NZSA 2006 Conference Managers
GPO Box 128, Sydney NSW 2001
Phone: +61 2 9265 0700 Fax: +61 2 9267 5443
Email: statsnz2006@tourhosts.com.au

Expression of Interest

If you are interested in attending the Conference, please register your interest on-line www.statsnz2006.com

Scientific Program

A stimulating and cutting edge Scientific Program is being developed to cover a wide range of topics relevant to all statisticians. The program will provide practical knowledge and insights from prominent international and Australasian speakers and will address the latest developments in statistical research, education and practice.

Workshops

Technical workshops that are of particular interest to practitioners will be included in the Conference Program. The Scientific Program Committee is seeking potential workshop presenters. If you are interested in contributing please contact David Scott at d.scott@auckland.ac.nz.

and changes could not be ignored in the overall picture. Some views from the teachers' perspective were also aired.

A small group continued the discussion at a nearby restaurant.

August 2005

As part of my role as VP I have the distinction of writing up my own presentation to the August meeting of the WA Branch, which was titled "Some Representations of ANOVA in Experimental Design". As I explained to my audience, I owe the inspiration for the derivations and results presented in the talk to numerous people including all my teachers, some collaborators, and students in the unit on linear models and experimental design at Murdoch University (M374 from 1984-1991 and MAS481 from 1992-2005). I was encouraged prior to the meeting to receive an email of good wishes for the talk from a visitor to Perth who is based in the US.

It is always good to start with a gentle introduction. This was about non-central chi-squared and F distributions, some definitions, a little theory and an illustration of what transpires when one wishes to test that the non-centrality parameter is zero versus an alternative that it is greater than zero.

I reviewed some history of the distribution theory behind ANOVA and gave representations that I have derived based on that history. The approach taken by J.O. Irwin in a paper published in 1934 can be streamlined using Kronecker products and partitions of Helmert matrices. The details appeared in a paper I published in 2002. This was followed recently by material that I gave in a joint presentation at the ISI Conference in Sydney in 2005 involving the above representations to derive ANOVA for a mixed model for a two way layout (Clarke and Hogan (2005)). For example the rows in the two way layout can be represented by fixed effects and the columns by random effects.

Using this approach I then gave some results that for the representations for a traditional model for a split plot design showing the methodology for deriving the distribution theory behind ANOVA can be extended to more complex designs.

My conclusion is that understanding the distribution theory behind the ANOVA is an important step even for persons training to be practical or applied statisticians.

Discussion after the talk included interest in how I teach ANOVA. I explained that I had been inspired based on teaching and research at several universities (including the University of London, ETH-Zürich, and the University of North Carolina at Chapel Hill) in the area of ANOVA prior to coming to Murdoch University and together with 20 years experience at that institution, where I have frequently been asked both questions of theory and practice of linear models, that this was the basis for a draft of a book. It was noted that the representations I gave could potentially be used for permutation tests. Also it was pointed out to me that the well known statistician Oliver Lancaster dedicated his book to J.O. Irwin.

Discussion continued at a local restaurant, with suggestions and interest in the talk and potential book.

References:

Clarke (2002) A representation of orthogonal components in analysis of variance, *International Mathematical Journal*, 1, 133-147

Clarke & Hogan (2005) A way of deriving ANOVA for mixed models and variance component models based on an historical representation of component sums of squares. *Proceedings of the 55th Session of the International Statistical Institute (ISI), Sydney.*

Lancaster, H.O. (1969) *The chi-squared distribution.* New York: Wiley.

Brenton R. Clarke

membership without the journal should be made available. The evening ended with a sumptuous pizza-style dinner as sponsored by the School of Finance and Applied Statistics (FAS) at the Australian National University (ANU). Special thanks must go to Jennifer Hunt of FAS for her exceptional efforts which made the entire evening a great success.



Richard Hutchinson, Brent Henderson and Emma Farrell

Emma Farrell

Emma Farrell never expected to have a career in mathematics. She came to the ANU to get out of the small country town where she grew up, and decided to do an Arts degree. Motivated by a desire to help people, she majored in psychology and aimed to become a clinical psychologist. However, this required a masters degree, which required an honours degree. Emma particularly enjoyed the statistics which she studied during her honours year. Also, by then she had met so many 'crazy and depressed people' that she didn't want to do clinical psychology any more. So she took up a temporary job at the ABS, starting on the day her honours thesis was due, and eventually obtained a permanent position.

During her six years with the ABS, Emma has developed standards for the design of survey forms and questionnaires. This work has involved the testing of data collection instruments, both theoretical and applied research, and also some external consultancies. Emma feels that she has made good use of the skills gained in her psychology degree, since the design of survey forms requires a good understanding of how people think and how to get them to respond when they don't want to. Also, the statistics which she learnt at university has given her a good appreciation of the need for representative samples and the impact on data quality of measurement error and non-response bias.

To give the audience an example of her work, Emma distributed a handout titled

CANBERRA

The experiences of two young statisticians

At the monthly meeting of the Canberra Branch of the SSAI on 30 August 2005, two young statisticians - Emma Farrell of the Australian Bureau of Statistics (ABS) and Richard Hutchinson of Covance - shared their work and study experiences over the last few years. The two presentations were followed by a lively discussion about the issue of young statisticians needing support during the early stages of their career. It was mentioned that the CSIRO is big on mentoring and that this could also happen under the auspices of the SSAI. It was noted that this suggestion has been made before, and that perhaps the mentoring should be very informal and not necessarily at a technical level. Several persons, including some students, expressed a view that to increase numbers in SSAI, a much cheaper

'Developing a new system for Computer Assisted Telephone Interviewing (CATI): The Business Technology Survey, 2002-03' and discussed a few questions from this survey dealing with IT security measures. She described how these questions were improved and tested in order to adapt the self-administered paper form into a CATI interview. This process involved a split-sample experiment which tested various versions of the survey form, with real interviewers calling live respondents and with both monitored by Emma and others. The result was the elimination of the versions which were too vague or too tiresome, either for the respondent or the interviewer. The split-sample experiment was followed by useability testing of the screen design.

Richard Hutchinson

Richard Hutchinson's talk was titled 'The transition from statistics student to biostatistician'. In the first year of his BSc degree at The University of Auckland, Richard did a range of science subjects including chemistry, physics, mathematics, computer science, biology and statistics. He enjoyed statistics and biology the most, and this led him to decide in second year to eventually do an MSc in Medical Statistics, also at Auckland University. Richard's MSc included statistical theory, regression modelling, survey statistics, epidemiology, clinical trials, mixed models, bioinformatics and statistical computing. Amongst these topics, Richard particularly enjoyed survey statistics and clinical trials, and his dissertation was titled 'Methods of estimation for a dual frame survey with a complex design'.

After finishing his MSc in June 2004, Richard had the option of either doing a PhD or looking for a job. He chose the latter and decided to head to Canada – his birthplace – to start looking. Richard's job hunting began at the Joint Statistical Meetings held in Toronto in August 2004, where a career fair featured recruiting and interviewing by more than 50 companies. Richard was interviewed by eight organisations, including Eli Lilly (a pharmaceutical company) and the John A. Burns School of Medicine at the University of Hawaii. He found that the interviewing techniques varied greatly between organisations, and also that companies preferred statisticians with experience and US citizenship, neither of which Richard had.

Two of the organisations invited Richard for further interviews in person. These

were the prestigious Cleveland Clinic in Ohio (which specialises in heart problems and cancer), and Westat, an employee-owned survey research company, located in Rockville, Maryland, near Washington, DC. Richard found the two interviews to be in complete contrast with each other, with the Cleveland interview being long and formal (from 7.00 am to 5.30 pm with numerous technical interviews) and the Westat interview being short and informal (from 9.00 am to 12.00 noon). He also found the socio-economic conditions of the two locations quite different, with Cleveland being a city that has seen better times, and Maryland being very affluent looking.

After being offered a job by Westat, Richard decided to accept another offer by Covance in Canberra. This was a hard choice; but Richard now thinks he made the right one. He believes that he was not 100% ready to make the move to the USA, so far from his family in New Zealand. Also, he is now more interested in pharmaceutical statistics (specialised in by Covance) as opposed to survey statistics (specialised in by Westat). He is happy at Covance, although he would ideally like to practice more of the statistics that he learnt at university than he has been able to.

Borek Puza

VICTORIA

Martin Donadio, a member of the Victorian Branch, was tragically killed in a motor cycle accident in August. He was on the way home from his place of employment, the Australian Bureau of Statistics in Melbourne. Martin was highly regarded by all who knew him. He was vibrant, friendly and intelligent, and one of the main architects behind the rebuilding of the Victorian Young Statisticians Group over the last few years. The Victorian Branch Council extends its sympathies to Martin's family, friends and colleagues, and particularly to his wife, Natalie Karavarsamis. A full obituary appears elsewhere in this issue.

La Trobe University recently lost two of its senior statisticians to other universities. Richard Huggins accepted a chair at the University of Melbourne, and Mervyn Silvapulle is now a professor at Monash. I asked Paul Kabaila, the Head of Statistical Science at La Trobe, to explain how the Section is responding to these changes, and

to outline his vision for the future of Statistics at La Trobe.

Geoff Laslett

Statistical Science at La Trobe University

La Trobe University gained accreditation of its Statistics Degree Program by SSAI in June 2005. It is the first university in Australia to gain accreditation of its Statistics Degree Program. To achieve accreditation, a new third year unit that provides advanced level material on sample surveys, multivariate analysis and time series analysis was introduced in 2005. The introduction of this unit provides our students with a better rounded education in statistics. Achievement of accreditation has several advantages. It makes our graduates more attractive to employers. It also raises the profile of Statistical Science within the University.

Statistical Science at La Trobe has recently made two new full-time continuing appointments. Dr. Luke Prendergast has been appointed to a Lecturer position. His article entitled "Influence functions for sliced inverse regression" recently appeared in *Scandinavian Journal of Statistics*. Jarrod Tuck has been appointed to an Associate Lecturer position. Jarrod's PhD thesis is on the effect of preliminary statistical model selection on subsequent inference in the form of a confidence interval. He is planning to submit his thesis for examination before the end of the year. The appointment of both of these young statisticians is indicative of a renewal in Statistical Science at La Trobe. It is expected that another full-time continuing position in Statistical Science will be advertised within the next six months. Statistical Science at La Trobe has a long tradition of high quality research and resources continue to be allocated to maintain this high standard.

In addition, we are making new efforts to (a) inform high school students about career opportunities in statistics, (b) maintain close contact with our graduates and (c) develop better contacts with employers of our graduates. We are very pleased to have a very strong cohort of third and fourth year students who, in addition to a major in statistics, have a solid training in other fields such as commerce, finance or advanced level mathematics. These students will be eagerly sought after by employers.

Paul Kabaila

The risk of 1 + 2 + 3 + 4 - 5 being negative, when planning for the future

The speaker at the June meeting was Alan Brown, an Adjunct Professor at Swinburne University of Technology and a self-styled tired actuary. His intriguingly titled talk covered some of the ideas and models he has played with for many years. Alan took the numbers in the title of his talk to be expected values. When variation is added to these expected values, the possibility that the total could become negative is obvious.



Alan Brown
Photo: Brian Phillips

To illustrate this Alan conducted a practical demonstration using the two point “double or nothing” distribution for each variable. It is pleasing to report that the volunteer who put his \$1 on the table collected $2 \times \$0.20 + 0 \times \$0.40 + 2 \times \$0.60 + 2 \times \$0.80 - 0 \times \$1.00 = \0.60 . This amount was actually greater than his expected gain of \$0.50, and not less. The speaker showed how the normal power asymptotic expansion could be used to estimate the probability of a loss.

Using exponential utility to express his risk aversion, with $R > 0$ the risk capital, the speaker then derived a risk adjusted value of a random variable Y as $(Y,R) = -R \log E[-Y/R]$. He noted that the risk adjusted value is a multiple of the cumulant generating function of Y , and used a property of cumulant generating functions to prove that risk adjusted values are additive provided the random variables are independent. In many practical situations where random variables are being summed, the variables are not independent and adjustments to the second and higher cumulants of the total are required. The speaker built a copula model for the adjustments in terms of cumulant generating functions based on a known result for the second cumulant, or variance.

The last part of the talk covered the portfolio allocation problem introduced by Markowitz in 1952. This problem was re-interpreted as finding the asset mix that maximised the risk adjusted return. In this setting the problem has a unique solution. The resulting mix based on Australian sector data of annual returns for the years 1983-2004 showed a strong preference for shares and property trusts, whilst the same analysis for the period 1984-2003 showed a preference for government bonds. The speaker emphasised the need to look to the future and finished with a disclaimer about providing financial advice. A discussion followed on the current issue of Member’s Choice for superannuation.

Synthetic estimation of sub-district population microdata

On Tuesday 19 July the Victorian Branches of the Statistical Society of Australia and the Australian Population Association co-hosted a presentation by Dr Paul Williamson of the Department of Geography at The University of Liverpool, UK. Approximately two dozen members of the respective associations (including a few who are members of other societies) attended the seminar, held at Swinburne University of Technology.



Dr Paul Williamson
Photo: Brian Phillips

Dr Williamson addressed a problem confronting many researchers wishing to examine population and other trends at small (sub-national, regional or local) geographic levels. Census confidentiality requirements and/or small sample survey sizes mean that small area micro-level data are often not available. Yet population projections and many policy questions need to be investigated at a small area level. In Australia NATSEM (National Centre for Social and Economic Modelling) at the University of Canberra is developing a spatial microsimulation model to address such policy issues as local and regional demands for social security.

Dr Williamson has been working with NATSEM during his visit to Australia to develop techniques for adding geographical information to NATSEM’s currently non-spatial microsimulation model, DYNAMOD.

Dr Williamson put forward an approach that he has developed in the UK and that he termed ‘combinatorial optimisation’. He contrasted this approach with the conventional Australian Bureau of Statistics technique of reweighting data by age and sex. Combinatorial optimization creates a set of synthetic microdata, shown by Dr Williamson to have a high degree of fit to estimation constraints and capable of producing good estimates for margin-constrained distributions. In fact, Dr Williamson argued that in many cases synthetically generated microdata offer better accuracy than real survey data and stated that 2% sample survey data are not as good as synthetic estimates. A lively discussion ensued and the evening concluded with dinner at a local restaurant.

Maryann Wulff

Relating HFE genotype to chronic diseases in an Australian cohort study of hereditary haemochromatosis

The August meeting was addressed by Dr Lyle Gurrin, Centre for Molecular, Environmental, Genetic and Analytic Epidemiology, School of Population Health, University of Melbourne (MEGA). Dr Gurrin presented a population based study on haemochromatosis as well as some preliminary results. Haemochromatosis is an important public health issue and the current debate is about whether haemochromatosis is a disease that warrants public health screening.



Lyle Gurrin. Photo: Brian Phillips

Haemochromatosis is an iron overload disease which can have fatal results. Treatment, unlike many other diseases, is simple because it consists

of blood letting. This could actually provide benefits for the community since the blood could be used by others. A major gene, called HFE, and its alleles that cause susceptibility in Europeans have been known since 1995. However the relationship between the genetic predisposition, primarily through the C282Y allele, and disease is "necessary but not sufficient" so the hunt is on to identify environmental and genetic modifiers that will also be playing a role. Dr Gurrin focused on the environmental arm of two studies that are being coordinated at MEGA. He described the large selective sample, selected according to genotype that is currently being gathered for both studies and outlined some of the problems that have already arisen. Another polymorphism of the HFE gene, the H63D mutation, which is of much lesser consequence, has proven to be difficult to genotype, hence necessitating a change in study design and analysis. Dr Gurrin discussed the impact of this and another potential bias for one arm of the study which intends to focus on the relevance of these two polymorphisms on chronic disease. The final slide showed some follow up data for transferritin serum levels, a biochemical marker for haemochromatosis, from base levels taken a decade ago to current levels, color coded by genotype and whether or not individuals had received treatment (self reported). This showed that C282Y homozygotes, that is those individuals that have two copies of the susceptibility allele, seemed to have decreased transferritin levels at follow up if they had sought treatment. The study is very large and comprehensive with much data being collected that will be analysed in the next few years. It is impressive in the clinical and organizational challenges it presents and should yield important outcomes for public health.

After the meeting the speaker and members of the audience enjoyed dinner at "The Base Camp", a nearby Nepalese restaurant where further discussion took place over some glasses of wine.

Melanie Bahlo

NEW SOUTH WALES

Investigating Response Times with the Lambda Distribution

Robert King travelled from Newcastle to the University of Sydney to present the June talk on his research on

modelling response times. Despite the difficulties of trying to locate a room with data projectors, the talk started smoothly with everyone holding their breath to find out how a parametric distribution can have flexible shapes, as well as its applications.

The presentation started with an overview of his research problem in modelling response time ("RT"). RT corresponds to the time to respond to a stimulus over a number of conditions and subjects. The distribution of RT is then compared across different subjects and conditions and can be used to describe (short-term) decision-making processes.

Robert then introduced us to the generalized λ distribution. Basically, the generalized λ distribution is a quantile function which is defined by its inverse distribution function. The four parameters within the distribution control the location, scale, as well as shape, making it a very flexible distribution. It is able to model the right and left tails separately, which makes it particularly attractive for response time modelling. For a range of shapes that the Generalized λ distribution can produce, readers are invited to refer to: <http://maths.newcastle.edu.au/~rking/gld/>

Having defined the generalized distribution, the question of parameter estimation was then discussed. A number of methods including moment matching, MLE, MCMC and the Starship method were outlined and compared, with the Starship estimation method being most appropriate for the distribution in question. The Starship estimation method briefly works as follow:

1. The inverse transformation, $F(X)$ to the uniform, is applied to the data over a range of parameter values
2. The parameter estimates are chosen as the set of values that transform the data most effectively to the uniform as measured using a test statistic such as the Anderson-Darling.

Robert mentioned the advantages of the above method are that the distribution matches at the level of the depths rather than the quantiles (which aids numerical stability). It also allows sections of the range to be emphasized without giving too much weight to outliers. In addition, the method can be

seen as a form of *Maximum product of spacing* estimation.

Software that performed the necessary statistical analysis and plots was introduced, together with an area of future research where the generalized λ distribution was extended to a five parameter version to include the skewness parameter.

Robert was invited for dinner with the audience where the fitting of the distribution to data was discussed at length.

Frankie Chan

SOUTH AUSTRALIA

Applications of Hidden Markov Chains to Credit Risk Modelling

Dr Malgorzata Korolkiewicz, a lecturer from the School of Mathematical Sciences at the University of South Australia, was the speaker at the August meeting. She spoke on the topic of credit risk modelling and the role that Markov chain theory can play in this area.

Credit rating services are used to rate corporate borrowers based on public and private information. Investors can use these credit ratings to assess a firm's ability to meet its obligations and studies have shown that credit rating changes have an impact on investor returns. Although it is unknown exactly how credit ratings are derived, it has been shown that the majority of ratings can be predicted using a fairly small number of financial variables. An alternative approach to predicting credit ratings is to use the theory of discrete time Markov chains.

To model credit rating dynamics as a Markov chain, where the states space is the set of all rating classes, we need to know the transition matrix. This was estimated based on years of available credit ratings and it was observed that ratings tend to stay the same or if they do change, they typically increase or decrease by a single category. When using Markov chain theory, we assume that the credit rating process has no memory of its past. It is also assumed that the Markov chain is not observed directly but rather, it is hidden in noisy observations. Financial filtering can be used to estimate the state of the Markov chain and the EM algorithm is useful for obtaining parameter estimates.

Lisa Yelland

QUEENSLAND

July Branch meeting

Dr Chris Glaseby of Biomathematics & Statistics Scotland (BioSS), presented the July meeting on 'Image warping and segmentation using generalisations of dynamic programming'. The meeting was jointly hosted with the School of Mathematical Sciences, QUT.

Dynamic programming (DP) is a fast, elegant method for finding the global solution to a class of optimisation problems. For example, it can be used to find MAP estimators of boundaries, to automatically segment 2-D medical images into anatomical regions (Glasbey and Young, 2002). A variant, dynamic time warping, can also be used to align pairs of tracks in 1-D electrophoresis gels. However, for more complicated problems, such as segmentation of 3-D images or warping of 2-D images, involving Markov random fields rather than Markov chains, DP is not possible. Chris considered generalisations of DP to optimise posterior densities in problems involving image restoration, warping or segmentation. One approach is a greedy algorithm, where DP is used to recursively solve each of a series of 1-D sub-problems in turn, to find a local optimum.

Another generalisation is to use a simulated annealing cooling schedule and sample from the posterior densities of the 1-D sub-problems, using a forward-backward recursion similar to the Baum-Welch algorithm. This algorithm was originally proposed by Eddy (1995) for alignment of multiple DNA sequences. Methods were illustrated using data from 3-D X-ray computed tomography, 1-D and 2-D electrophoresis gels, microscopy images and synthetic aperture radar.

Dr Glaseby is Head of Research, BioSS in Edinburgh, Scotland. His main research interest is in spatio-temporal modelling, particularly as applied in image analysis and meteorology. He is joint editor of Applied Statistics and a member of the EPSRC Peer Review College.

August Branch meeting and seminar on spatial statistics

Before the meeting proper commenced, one of our Queensland members, Dr Melissa Dobbie, was presented with her A.Stat. certificate



Dr Melissa Dobbie pictured in her office at CSIRO with her AStat certificate.

by branch president, Professor John Eccleston.

Professor John Eccleston welcomed Tim Barker, Assistant Government Statistician and Director Queensland Spatial Information Office, Queensland Office of Economic and Statistical Research and Robert Bischof, Manager Business Development, Qld Department of Local Government, Planning, Sport and Recreation who presented a talk on 'Queensland Spatial Information Strategy - Probably Just as Good for Statisticians'. The meeting was held at the Office of Economic and Statistical Research, which made for a nice change from the usual QUT/UQ venues. People who wish to use spatial information often find that it can be difficult to locate, is hard to get access to and may not be in a form suitable for their purpose. The Queensland Spatial Information Strategy (QSSIS) is the mechanism being used in Queensland to tackle these issues. QSSIS is an initiative to assist in providing easy access to relevant and reliable integrated spatial and strategic information for Queensland. The presentation outlined the role the Queensland Spatial Information Council and the Queensland Spatial Information Office (QSIO) and showed how the strategies, policies and projects that QSIC has sponsored over the last ten years has changed the landscape for information access across the whole of the information industry, including those organisations who are primary statistics providers. A number of case studies where the spatial and statistical worlds have collided were profiled.

Tim Barker is an Assistant Government Statistician in the Queensland Treasury responsible for

information coordination, strategy, publication and communication for the Office of Economic and Statistical Research. Tim is also the Director of the Queensland Spatial Information Office, responsible for implementing key spatial information projects in Queensland as directed by QSIC. Starting as a surveyor's chainman in outback Queensland, Tim has over 25 years experience in all sectors of the spatial information industry. Tim has a Bachelor of Applied Science (QIT) and Master of Science in Engineering (UNB) and is currently studying towards a PhD at the Queensland University of Technology, where he has also lectured for 15 years. Tim is the immediate past president of AURISA and is currently the Spatial Information Commissioner and President Elect of the Spatial Sciences Institute. Tim was named APSEA Spatial Professional of the Year in 2004.

Robert Bischof is currently the Acting Manager, Business Development Team, Strategic Information Services, Department of Local Government and Planning, Sport and Recreation. Previously, Rob worked for CSIRO for 22 years researching the application of information to regional planning before moving to the Queensland State Government. His first job in State Government was a short consultancy to develop the draft business case and functional specifications for the EPA's internal mapping application ECOMAPs. This was followed by two and half years as the SEQ 2021 GIS Coordinator where he was responsible for coordinating the use of spatial information and technologies to support regional planning in South East Queensland (SEQ). After this position, he was the Principal Business Advisor of the Queensland Spatial Information Infrastructure Strategy (Queensland Spatial Information Office (QSIO)). He is passionate about the use of spatial information in providing information to support a range of business outcomes.

Twenty-two people attended the meeting and a group went out to dinner at a local restaurant with Robert Bischof.

September Meeting

In late September, the branch held a day-long conference at the Queensland Bioscience Precinct in Brisbane. There were about 30 attendees, mostly from



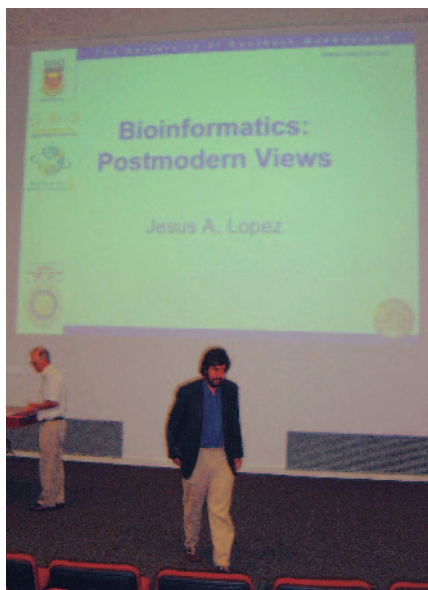
UQ PhD student Tim Waterhouse being presented with a \$200 book voucher by Melissa Dobbie, CSIRO Mathematical and Information Sciences.

University of Melbourne discussed “The design-based and model-based analysis of complex survey data”, and Robert Ware, UQ School of Population Health, talked about “Principal stratification approach to dealing with treatment-noncompliance and subsequent nonresponse”. Abstracts for the invited talks are available on the branch website (<http://www.maths.qut.edu.au/ssaqld/>).

The afternoon saw 6 student presentations with a variety of subjects from experimental design to wavelet applications. Five of the speakers were judged on their talks by a panel of judges (the sixth student speaker was from UNE in NSW so unfortunately for him, wasn't in the running!). A \$200 book voucher, which was generously donated by the CMIS Environmental Informatics theme, was awarded to the best student talk. Tim Waterhouse, a PhD student of Professor John Eccleston of UQ, was the recipient of the award for his talk on “Optimal design for logistic regression with random coefficients.”

Dr Ross Darnell, UQ, was the main organiser of the day. The branch would like to especially thank him for his efforts in pulling together the conference and creating an opportunity for Queensland-based statisticians to gather and listen to some great presentations on innovative research.

Miranda Mortlock and Melissa Dobbie



Dr Jesus Lopez of USQ.

academic institutions in Brisbane (UQ and QUT) and Toowoomba (USQ), but a few from various government departments also attended. There were 4 invited talks presented in the morning: Jesus Lopez from the University of Southern Queensland spoke on “Bioinformatics: Postmodern views”; Michele Haynes from UQ Social Research Centre presented “Estimating a GLMM for categorical longitudinal survey data”; Murray Aitkin from the



Ian Wood, Ben Stewart-Koster and Katie Lee, all of QUT, at the conference dinner.

MASA

Model Assisted Statistics and Applications

An International Journal
ISSN: 1574-1699

www.iospress.com

Editor-in-Chief: Sarjinder Singh
Managing Editor: Stephen Horn
Treasurer: Sylvia R. Valdes