

Penny's Winning Ways

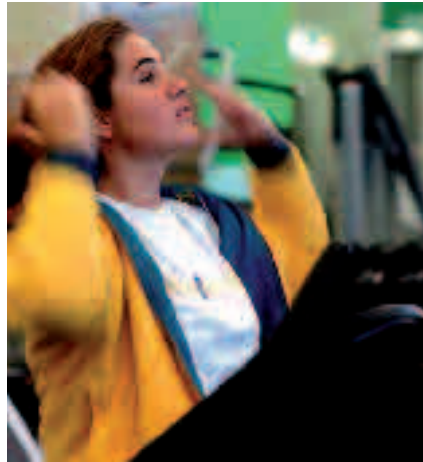
Penny Bennett is virtually blind yet she carried an Olympic torch when all she could see was a blur, played goalball in the Sydney Paralympic Games, has won national awards for running, is studying for her PhD in statistics and has made up her mind to write a book. She has won a scholarship to Montreal to be a delegate at the International Biometrics Conference. She is the only non-sighted delegate. KERRY KENIHAN speaks to her.

PENNY Bennett is into all things athletic. The 29-year-old works out regularly, power lifts, is a high jumper, enjoys playing cricket and running, swims with ease and confidence and, in 2000, she carried the flaming torch on a sector towards the Sydney Paralympic Games. It was one of her greatest challenges because everything before her in the run was at best a blur. Yet she ran her sector in triumph for her country.

If only this successful statistician and continuing student could see her own face fully in a mirror – smiling, optimistic, friendly, bright and beautiful. But Ms Bennett has a degenerative sight condition, retinitis pigmentosa. To a sighted person, this means she is virtually blind. However, the only things to otherwise distinguish Ms Bennett in an Adelaide crowd and at university are the cane she carries and a bag containing a computer slung over one shoulder. The raised symbols on the computer keys are her eyes.

She has every other sense including acute hearing. Her condition has not prevented the former Seaview High School student from graduating from Adelaide University with a bachelor of science degree in maths and computer science with honours and, amazingly, working in traffic management for Telstra, in Melbourne. At the moment, Ms Bennett is employed in Adelaide for the same company part-time in statistics ... as well as continuing her PhD in statistics and doing research.

"At school, my sight was poor but I always sat up in front and I could read large print," she says. "Seaview High had a unit for the vision impaired. I lived at home until I went to Townsend House in



the city for Years 10-12. It had a program linked with Seaview High.

"The highest challenge was doing my honours at uni when I could no longer read but I was allowed to take oral, instead of written, examinations and, in the meantime, I used computer speech software programs, which enabled me to listen to documents. I can't read maths but, in latex language, I hear how it is written in codes. I have become tactile and can put through programs which make the lines raised.

"I have learned some braille. My supervisor at uni always talks to me about maths and discusses alternatives and options.

"I enjoy statistics. It's my area as it relates to people and I particularly want my future to be further focused on statistics on health."

Rapidly, Ms Bennett became more than computer literate and superior in the skill. Encouraged by her parents and now partner Phil Sanchez, a computer scientist whom she met while they studied Year 12 together, Ms Bennett has pursued her love of sport. At Sydney's Paralympics, she was a competitor in the women's goalball team. "It's like volleyball," she says. "Each sighted team member wears a blindfold and has to defend a section of a volleyball court. The ball has bells and we stop the ball with our bodies."

Ms Bennett has played cricket in much the same way with belled balls, which

she hits if someone tells her from which direction to swing the bat. She runs with a guide attached to her by a rope. She's won national awards in her sighted category in running 3000m and 5000m races and also has soared as a winning high-jumper in national competitions for the blind. She loves swimming "because I can still see the big black lines at the bottom of the pool". Another hobby is listening to classical literature. "I love Dickens and Jane Austin on tapes, pick up CDs all the time and am interested in history – and just about everything."

A dream will be realised for Ms Bennett this coming July. She has won a scholarship to Canada (the only non-sighted person) to be a delegate at the International Biometrics Conference, in Montreal. This relates to statistics and Ms Bennett has been given first place in representing Australasia. Mr Sanchez is saving to accompany her but the two have extra reasons to put their pennies together – to go abroad more often. Recently, Ms Bennett attended a travel-writing course at the Workers Educational Association where she revealed a deep ambition to write a book, a view of Europe. As the tutor spoke, she quickly keyboarded each word and every exercise in creative writing came up on her screen for reading to the class by the instructor. She will write the words in her book through her perceptions and Mr Sanchez, an accomplished photographer, will record what she cannot see.

"My goal in life?" she says, smiling widely and warmly. "It's happened. To decide what I want to do and how to make it happen. I never had peer pressure. I've had supportive family and friends. People I care about have been encouraging but I haven't expected them to work things out for me. I have become inventive. My ultimate aim is to be my best at what I do." So far, this inspirational young woman certainly is.

Kerry Kenihan

This article appeared in the CareerOne section of *The Advertiser* as 'Blind girl who keeps on winning' on February 4th, 2006. It is reprinted courtesy of *The Advertiser* and Kerry Kenihan.

Update on AusCan2006 Scholar Visit

By the time you read this, Dr Mu Zhu, an assistant professor of statistics at the University of Waterloo, Canada, will be in Australia meeting with statisticians and statistics groups as the inaugural AusCan Scholar (see www.statsoc.org.au for further information on this scholarship). His current research interests include rare target detection, data mining, multivariate analysis, pattern recognition (namely classification and clustering), dimension reduction and variable selection. A list of his recent publications is provided on his webpage <http://www.stats.uwaterloo.ca/~m3zhu/>.

An AusCan Scholar liaison group (see details of representatives below) is coordinating Dr Zhu's visit to statistical groups across Australia and arranging opportunities for him to present seminars at Statistical Society of Australia branch meetings. Dr Zhu's itinerary is coming together and some of the detail has been locked in. Dr Zhu will visit:

Sydney

17 September - 1 October

Brisbane

1- 9 October

Perth

9- 11 October

Melbourne

11- 23 October

Adelaide

23 - 25 October (dates tentative)

Canberra

25 October - 9 November

(dates tentative).

The liaison group have arranged for Dr Zhu to present SSAI branch talks in Sydney (Tuesday 19 September), Brisbane (Tuesday 3 October), Perth (Tuesday 10 October), Adelaide (tentatively Tuesday 24 October) and possibly Canberra (to be confirmed).

In addition, Dr Zhu will present one-day workshops on "Statistical Machine Learning and Data Mining" at the University of Technology in Sydney on (tentatively) Wednesday 27 September and at the University of Adelaide on (tentatively) Monday 23 October. The workshops will be free (although attendees will be required to register) and the format of the workshop will comprise a series of talks based on Dr Zhu's research in this general area. Further details about the workshop including the program and

registration forms, will be available on the SSAI website (www.statsoc.org.au) or by contacting the appropriate AusCan Scholar liaison representative.

If you're interested in meeting with Dr Zhu whilst he is visiting your area and haven't registered your interest, please contact your AusCan liaison group representative as follows:

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Kernels and Ensembles: A Workshop on Statistical Machine Learning and Data Mining

Presented by Mu Zhu, PhD, University of Waterloo, visiting AusCan Scholar

Sydney, Wednesday 27 September or Adelaide, Tuesday 24 October

Workshop description: The late 1990's saw two major advances in machine learning: the support vector machine (SVM) and

the boosting algorithm. In this workshop, I will focus on two basic ideas behind these algorithms. The first one is that we can transform many classical linear algorithms into highly flexible nonlinear algorithms by using kernel functions. The second one is that we can usually make more accurate predictions by

using an ensemble of relatively simple-minded models rather than one highly sophisticated model. I will also present two new algorithms of mine that are very much related to these basis ideas.

Further information and registration details can be found at: <http://www.statsoc.org.au/WhatsNew/>

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President's Corner

ASC/NZSA 2006

I hope attendees enjoyed the varied program for the joint statistics conference held in Auckland on 3-6 July. David Scott and his team did an excellent job in organizing such a smooth-running and interesting event.

Elections

Please join with me in welcoming William Dunsmuir as our new Vice-President (and President-elect). Neville Bartlett has completed four years of intensive service to SSAI and he certainly has my admiration and appreciation for his unflagging efforts to improve the profile and professionalism of our society.

Capitation Fees

An important item discussed at the SSAI Central Council Annual General Meeting was the financial stability of our Society. There are three components to our finances, i.e., operational, strategic and journal publication (the latter being conducted jointly with the NZSA), and presentation of our financial information now reflects this. Although we raised capitation fees two years ago, it had been assumed that we would also increase membership considerably. Unfortunately, that has not occurred, and the current capitation fees are not sufficient to cover our operating expenses. We cannot rely on conference and workshop income for this purpose, or continually draw on reserves to fund everyday activities.

Stephen Horn, our Treasurer, recommended a large increase in the capitation fee and the setting up of a strategic fund (possibly augmented by calls on reserves) from conference and workshop activities in order to fund initiatives. This was discussed in detail and it was accepted that an increase in the capitation fee was necessary, while at the same time trimming operating costs as much as possible. Face-to-face Central Council Meetings will be reduced and we will consider moving to e-delivery of the Newsletter. Branches are strongly encouraged to run worthwhile

and financially successful activities each year to help fund various initiatives.

There is no question that we need a professionally run Society, and we cannot rely on large voluntary time commitments from members to achieve it. The Society must also be seen to be providing value to its members; one of the original reasons for people joining societies (access to relevant journals) no longer applies. We want SSAI to fulfill the role of a professional network, which furthers the study, application and good practice of statistical theory and methods in all branches of learning and enterprise. To do this, members must maintain their affiliation.

After much debate, it was agreed that the capitation rate for 2007 be set at \$140 (including GST) for ordinary members, \$70 (incl GST) for retirees, and \$15 (incl GST) for students. The corresponding figures for 2006 were \$99, \$49.50 and \$15. Members need to recognize that this will result in a modest, short-term reduction in reserves. Please note that the actual capitation fee will also have a Branch component added to the above amounts.

The Society's financial position will be improved if we can increase our membership. This requires a concerted effort by the Society and its Branches to attract and retain members. This shall be a major topic of discussion in the future.

Kaye Basford

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Managing the ANZJS ...

(L-R) Kerrie Mengersen (ANZJS Editor), Rodger Littlejohn (NZSA), Neville Bartlett (SSAI), Murray Jorgensen (NZSA), Nick Melchior (Blackwell Publishing), Kaye Basford (SSAI), William Dunsmuir (SSAI)

(Photo: Harold Henderson)



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Editorial

This edition of newsletter focuses more than usual on the people who make up the Statistical Society. It is of course the people that make Society events happen, and we encourage all members to use the reports here as an inspiration to become more involved in the activities of the Society.

As regards individual members, firstly a reminder that in November 2004 Society member Penny Bennett, PhD student in Statistics at the University of Adelaide, wrote for the newsletter about the challenges she faces in her statistical research due to her blindness. Penny has been in the news again recently and we are delighted to feature her in the newsletter once again.

More individual members were recently honoured with service awards, Pitman medals and the Pitman prize. These were all presented at the Australian Statistical Conference in Auckland, and this newsletter contains the first instalment of information about the recipients. We also report on Terry Speed's award from the American Statistical Association.

Finally and on a broader level, a reminder that Branch reports have been in the newsletter since issue number 1. This key activity of the Society around the country is the main opportunity that members get to meet with each other, discuss work in progress, hear talks by local and international invited speakers, and continue discussion over a restaurant meal. This newsletter reports on as many meetings as we are informed about, and as always the Editors are delighted to receive reports of meetings and conferences that would be of interest to members.

Member News

The American Statistical Association chose Terry Speed as the Fisher lecturer for 2006. This lectureship recognises a leading statistician who has contributed significantly to scientific investigation through the development and promotion of statistical methods. The lecture took place at the Joint Statistical Meetings in Seattle on August 9. Congratulations Terry!

Professional Development Opportunities

Challenges of Running Oncology Clinical Trials

The NSW Branch is running a workshop on the challenges of running oncology clinical trials on 27 October 2006 at the Macquarie Graduate School of Management.

This workshop is an opportunity to share experiences and challenges of working on clinical trials in oncology. The workshop will start with discussions around the designs of oncology clinical trials and the subsequent logistics from a statistical, monitoring and data management perspective. From there the focus will move to safety reporting and the use of data safety monitoring boards. After lunch the discussions will become more specific around the measures and analyses used in phase II vs phase III trials and the benefits and pitfalls on using the RECIST criteria.

Details of the workshop and the registration form can be found on the NSW Branch website or by following links from www.statsoc.org.au

Three Doors with Borek Puza (Edition 7)

Welcome to the 7th edition of *Three Doors*. Last time I presented The Passenger Puzzle and several persons wrote in with a correct solution. Following a random draw I am pleased to announce Warren Paul as the latest winner of the Three Doors Prize, a cheque for \$60 donated by SSAI. I would also like to commend Teresa Neeman for a very elegant solution by induction, and that solution is presented below (in my own style). Furthermore, I would like to thank Edward Szoldra for presenting me with a statistical problem which led to the next puzzle (The Widget Puzzle), as given below.

The Passenger Puzzle

There is an aeroplane with 100 seats and 100 passengers, each with a seat assignment. The first passenger to enter the plane loses his seat assignment, and so picks a random seat. Each of the following passengers, entering one by one, takes their seat if available; otherwise they pick randomly an available seat. What is the probability the 100th passenger sits in their own seat?

Solution to The Passenger Puzzle

Let $p(n)$ be the probability that the last passenger takes their assigned seat for the case of a plane with n seats and n passengers. Now, it is easy to show that $p(2) = p(3) = p(4) = 1/2$. (E.g., $p(3) = (1/3) + (1/3)(1/2)$, i.e. the probability that passenger 1 takes seat 1 plus the probability that passengers 1 and 2 take seats 2 and 1, respectively.)

It appears that $p(n) = 1/2$ for all integers n greater than 1. Let us now try to prove this result by induction. Suppose that the result is true for all $n = 2, 3, \dots, m-1$, where m is an integer greater than 4. Then consider the case $n = m$.

For that case, observe that passenger 1 is equally likely to take each of the m available seats. Hence, by the law of total probability, the probability that passenger m takes seat m is the average of $q(1), \dots, q(m)$, where $q(k)$ is the conditional probability that passenger m takes seat m given that passenger 1 takes seat k . Thus,

$$p(m) = (1/m)\{q(1)+q(2)+\dots+q(m)\}.$$

Now $q(1) = 1$ and $q(m) = 0$. Also, for each $k = 2, \dots, m-1$ it is true that $q(k) = p(m-k+1)$. This is because if passenger 1 takes seat k then passengers $2, \dots, k-1$ all definitely take their assigned seats, and so the situation for passenger m becomes exactly the same as for case $n = m-k+1$. (Think of passengers $k, k+1, k+2, \dots, m$ as being assigned seats $1, k+1, k+2, \dots, m$, respectively.)

But by supposition, $p(m-k+1) = 1/2$ for all $k = 2, \dots, m-1$, and hence also $q(k) = 1/2$ for all $k = 2, \dots, m-1$. It follows that

$$p(m) = (1/m)\{1+(1/2)+\dots+(1/2)+0\} = (1/m)\{1+(m-2)(1/2)+0\} = 1/2.$$

This completes the proof by induction, and so the required probability is $p(100) = 1/2$.

Note

It can also be shown that the probability that the k th person sits in their assigned seat is $p(n,k) = (n-k+1)/(n-k+2)$, $k = 2, 3, \dots, n$. Thus, for $n = 100$, the individual probabilities that passengers $2, \dots, 100$ sit in their assigned seats are, respectively:

99/100, 98/99, 97/98, ..., 4/5, 3/4, 2/3, 1/2.

As a check, we can multiply these 99 fractions to get the single probability that passengers $2, \dots, 100$ all take their assigned seats, and the result is $1/100$. This is clearly correct because passengers $2, \dots, 100$ all take their assigned seats if and only if passenger 1 takes seat 1, and this does indeed happen with probability $1/100$.

The Widget Puzzle (courtesy of Edward Szoldra)

Yesterday, random samples of 20 widgets each from factories A and B contained 1 and 3 defective widgets, respectively. Today, you bought a box containing 8 and 2 widgets taken randomly yesterday from factories A and B, respectively. Upon testing all 10 widgets you find that exactly two are defective. Find the maximum likelihood estimate of the probability that both of these defective widgets came from factory A.

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

Conferences

BioInfoSummer, ANU, Canberra

Dec 4-8. There's no website yet but the email is BioInfoSummer@cbis.anu.edu.au

ISI2007, Lisbon, Portugal

<http://www.ine.pt>

Diary note – SSAI Young Statisticians section is planning a conference for April 2007 – see future issues or the SSAI website for updates.

Australian Statistical Conference 2008 – Melbourne

<http://www.statsoc.org.au>

Notes on ANZJS and the Structure of SSAI/ASPAI

The following note regarding the structure of SSAI/ASPAI and the Journal has been considered by Central Council and discussed at an open forum of NZSA and SSAI members at the conference in Auckland in July. A similar article is being published in the NZSA Newsletter.

Summary

This note assembles a very recent financial summary, the latest discussion paper regarding the structure of SSAI/ASPAI (available at www.statsoc.org.au) along with a series of notes and comments designed to give a comprehensive overview of where we are, what needs

to be done in the short-term and what issues should be considered over the next year or so.

Introduction

My time on the SSAI Executive is just about to end and I have been involved in non-editorial matters related to ANZJS over the last four years. This set of notes is aimed at pulling together many related matters so that future considerations can be based on fact and with a fairly complete view. My intention is to provide the editorial team and both societies with useful and relevant information.

Financial Summary of ANZJS

The full summary is included in Appendix II with comments and notes.

Note: all amounts are in AUD.

Preparation of this summary has taken some time because of the timing of Blackwell invoices and payments. Invoices for the printing costs (see expenditure above) are reasonably regular and have not caused any great problems. Blackwell's payments of commission and contribution to editorial expenses have been highly erratic with regards to timing and this year the amount was out of whack as well. In fact we were overpaid by Blackwell and it took some time for Jane Waslin (SSAI Executive Officer) to resolve just how much should be refunded. Now that all has been sorted out we have a very reliable financial overview.

Implications of ANZJS Financial Position

- For volume 48 (2006) we are operating at a surplus and the societies can now consider introducing OnLine Early and WebCentral (see below) with a clear knowledge of where we are financially. This information has only become clear very recently.
- The change of copy editing and type setting to Blackwell was necessary in order for the e-version of ANZJS to be produced and has resulted in a financial gain. We have incurred extra costs of \$21,590 (see printing line) and no longer incur expenses of \$29,530 for copyediting/typesetting but this gain is inflated by the impact of the bumper issues on the costs for volumes 46 (2004) and 47 (2005).
- By removing the impact of bumper issues from 2004 and 2005 it becomes evident that ANZJS would have operated at a modest surplus in these two years. This implies that the contribution rate of AUD27.50 does not need to change. The bumper issues have been funded out of SSAI reserves. This needs to be discussed further between the two societies.
- No account has been taken of the \$5 discount offered to members who elect not to receive the printed version

Publication year	2004	2005	2006
Volume	46	47	48
Income			
NZSA members	397	396	389
Fee per member	\$27.50	\$27.50	\$27.50
Total NZSA capitation	\$10,918	\$10,890	\$10,698
SSAI members	763	779	841
Fee per member	\$27.50	\$27.50	\$27.50
Total SSAI capitation	\$20,983	\$21,423	\$23,128
Blackwell - royalties on non-member subscriptions (1)	\$28,285	\$26,611	\$25,000
Blackwell - contribution to editorial expenses	\$3,927	\$4,029	\$4,134
Total Income	\$64,112	\$62,952	\$62,959
Expenditure			
Number of members	1,160	1,175	1,230
Blackwell - printing rate (3)	\$22.50	\$22.50	\$35.50
Blackwell - printing STD	\$28,710	\$29,081	\$48,028
Blackwell - bumper issues	\$14,000	\$5,280	\$0
SSAI copy editing / typesetting	\$35,006	\$29,530	\$0
SSAI admin charge (2)	\$7,056	\$7,934	\$6,794
Audit/Legal expenses	\$1,000	\$1,000	\$1,000
Total Expenditure	\$84,772	\$71,825	\$54,822
Total Inc - Exp	-\$20,660	-\$8,873	\$8,137
Per member	-\$17.81	-\$7.55	\$6.62

of the journal. At the moment each society bears this cost outside of the finances reported here. For SSAI, it is believed that only about 5% of members have taken up this option so far. For NZSA, 15% of NZSA members have already taken up this option (19% of those 306 that have renewed, 80 others are still to renew and indicate their journal option).

OnLine Early and WebCentral

OnLine Early is a Blackwell system that holds accepted papers in an electronic format until they are finally published. This enables authors and others to access forthcoming papers. Originally Blackwell quoted a figure per paper and then revised the number upwards to GBP15.50 per paper. Assuming 40 papers per annum and GBP15.50 per paper at today's exchange rate gives a cost of AUD1,556 per annum.

WebCentral is Blackwell's system for tracking papers right from the moment that they are submitted to the ANZJS Editors. Currently, our editors manually track all papers until acceptance and then Blackwell take over tracking etc. until publication. I do not have the costs of introducing this system at hand.

Now that we have a clear financial picture requests from the Editorial team can be considered promptly.

The Structure of SSAI/ASPAI

A trans-Tasman group was formed to consider the structure of SSAI/ASPAI and to look at ways of ensuring that NZSA has a more direct formal role in the non-editorial management of ANZJS. This group consists of Kaye Basford (SSAI President), Murray Jorgensen (NZSA President) plus Helen MacGillivray, Harold Henderson and Neville Bartlett. A current version of the discussion paper is included in Appendix I. Since these discussions have started, SSAI has decided to remove all non-journal transactions out of ASPAI so that the financial management of ASPAI moves much closer to that of the financial management of ANZJS. Implementation of accrual based accounting practices into SSAI and ASPAI will help to make the financial reports more useful.

Preparation of the ANZJS financial summary (Appendix II) by Jane Waslin has greatly assisted the decision making capability regarding ANZJS matters. It is highly desirable that we keep Jane involved in the future so that more of the details can be carefully handled. We are now in a position to speed up decision making between the two societies because of this financial summary.

In the short-term, discussion of non-editorial ANZJS matters can be handled between the ANZJS Editor and the two presidents with support from Jane Waslin.

We still need to ensure that NZSA has a formal role in ANZJS decision making and the current configuration of ASPAI does not satisfy this requirement. Whether establishing a board of management for ANZJS (as per the discussion paper in Appendix I) is the best solution or not needs wider discussion between the two societies.

Short-term ANZJS Issues

Apart from reaching decisions about OnLine Early and WebCentral, there is another matter that should be discussed. In 2005, NZSA and SSAI agreed to implement an e-version of ANZJS for a one year trial. This involved copy editing and typesetting being handled by Blackwell as well as a different cost structure. It is time to assess this arrangement and to decide if we wish to continue with it.

Longer-term ANZJS Issues

The contract with Blackwell to publish ANZJS rolls over every five years and we have about two years to go on the current one. It is time to start thinking and discussing the options for the future with Blackwell and others if we wish. The previous roll-over of the contract with Blackwell occurred by default without much, if any, discussion within or between the two societies. No one was too concerned about this because it was highly likely that we would have decided to continue with Blackwell. It is highly desirable that such discussions take place before the current five year contract.

*Neville Bartlett
26th June 2006*

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ASC/NZSA 2006 – An Undergraduate’s Perspective

There were a handful of students at the Australian Statistical Conference 2006 in Auckland, mostly from Australian and New Zealand universities – our badges proudly proclaiming “STUDENT” in large, bold letters. But all aside from yours truly were at least at the honours stage of their studies, and upon hearing I was still an undergraduate the reaction of any delegate I met at ASC/NZSA 2006 was always the same – widened eyes and a friendly comment along the lines of “Wow, you’re keen!”. Which always prompted me to explain how I came to be there in the first place.

After spotting the advertisement by CSIRO Division of Mathematical and Information Sciences and the SSAI in one of the SSAI newsletters about giving statistics undergraduates financial assistance to attend the conference, I



Photo: Jane Waslin

applied. And several weeks later I received a call from Doug Shaw, of CSIRO Division of Mathematical

and Information Sciences and also the secretary of the SSAI informing me my application had been successful. Doug was one of the first ‘new’ people I met face to face at the conference. He introduced me to Murray Cameron, the chief of the CSIRO division that had sponsored me, and a couple of others who were nearby. Now well and truly in the presence of statistics royalty, I jokingly asked the small group whether I should kneel. To which Dr Shaw quickly replied: “No, just a small bow will be acceptable.”

The conference proceeded with this relaxed and light-hearted atmosphere. I attended many different talks on a wide range of subjects and the speakers were very different people from different countries. This variety of topic, speaker and background was probably the most useful thing to students. Although some speakers managed to lose me in a sea of Greek symbols with the first few slides, I kept up with the general idea of all of the talks. The main thing I took away from ASC/NZSA 2006 was a better idea of what I would like to focus on for honours and beyond – not necessarily an easy task for a statistics student!

Conferences like this are a fantastic opportunity for students of statistics not just to broaden their view of the profession, but to meet new people and build up a few contacts. It is not that common to have so many statisticians in one place at the same time, and I had the privilege of meeting many powerful statisticians from both academia and

Thinking Statistically

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industry, and talk about what I may do next year. I think for the most part many undergraduate students are simply not aware that opportunities like this exist, and if they are, many would dismiss thoughts of attending believing they would be out of place and not understand anything. This is not true, and the entire statistical community can never go wrong with making things like the SSAI newsletter more available to students, having more information around university departments (posters, ads etc) and generally keeping students more informed on developments and events in the profession. Really encouraging students to think about these opportunities is one thing, first they need to know about them!

All in all, ASC/NZSA 2006 was an excellent conference – even for undergraduates! Hopefully future conferences will see more students attending. I would like to once more extend my thanks to the CSIRO Division of Mathematical and Information Sciences and the SSAI for making this trip and all of the opportunities that have arisen from it possible for me.

Tilman Davies

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Report on the 7th International Conference on Teaching Statistics

Salvador, Bahia, Brazil 2-7 July 2006, Working Cooperatively in Statistics Education

By Gilberte Schuyten (President IASE), Carmen Batanero (IPC Chair), Lisbeth Cordani (LOC)

The International Conferences on Teaching Statistics (ICOTS) are the most important means of interchange that the International Association for Statistical Education (IASE) offers to the community of professionals and researchers concerned with statistics education. ICOTS history started 24 years ago when the Education Committee of the International Statistical Institute (ISI) decided to hold an International Conference on Teaching Statistics. The success of ICOTS-1 (1982, Sheffield, UK), ICOTS-2 (1986, Victoria, Canada), ICOTS-3 (1990, Dunedin, New Zealand) demonstrated that statistics teachers felt a strong need to unite, talk, and discuss the problems experienced in the course of their daily activities. In the meantime, it gave specialists in statistics, psychology and statistics education a forum to present the results of their research. Since the creation in 1991 of IASE as a section of ISI, IASE continued organizing ICOTS every four year (ICOTS-4, 1994, Marrakech, Morocco; ICOTS-5, 1998, Singapore; ICOTS-6, 2002, Cape Town, South Africa). ICOTS-7 'Working Cooperatively in Statistics Education' is the first ICOTS conference at the South American continent and was attended by a total of 520 delegates from 55 countries. It was organized in collaboration with the Brazilian Statistical Association (ABE) with support by the American Statistical Association and other institutions (see list at ICOTS-7 webpage).

The high number of Latin American delegates (over 170) reflects the mature state of statistics education in Latin America. Their participation was stimulated by reducing the fees for these delegates and by running some activities in Spanish and Portuguese. The conference was a great success thanks to the excellent work by the International Programme Committee and in particular to the efforts by

Carmen Batanero, Susan Starkings, Lisbeth Cordani, John Harraway and John Shanks as well as all Topic Organizers and organizers of contributed papers and of posters. The efficient local organization and hospitality by Pedro Morettin, Lisbeth Cordani, Pedro Silva, Clelia Toloi, Gilenio Borges, Wilton Bussab and their team as well as the warm atmosphere and natural beauty of Salvador resulted in excellent conference. Two main results are the beautiful web page managed by John Shanks and the ICOTS-7 Proceedings CD Rom edited by Allan Rossman and Beth Chance with over 350 papers and 120 posters abstracts. The ICOTS-7 Proceedings will be soon freely accessible at the IASE website on the IASE publication page. Special Interest Groups of Latin American educators started working one year before ICOTS-7 via Internet forums and met twice during the conference: SIG1 'Training

Mathematics teachers to teach Statistics in Spanish and Portuguese speaking countries', SIG 2 'Young Latin American researchers in Statistics education' and SIG 4 'Curricular development in Statistics education in Latin America'. Also the exhibition of concrete models in mathematics and statistics of the 'Laboratório de Ensino de Matemática coordinated by Elinalva Vasconcelos attracted many delegates. Special sessions and administrative meetings completed the programme. In one of these special sessions the forthcoming ICMI /IASE Study conference to be held in Monterrey, Mexico, June 30 - July 4, 2008, organized in collaboration with ICMI, the International Commission on Mathematical Instruction was announced). Also several activities of the IASE journal 'Statistics Education Research Journal' (SERJ) were organized by the SERJ editor Iddo Gal. Two workshops were run: one for current and



Speakers in the session, 'Research on the role of technology in learning and teaching statistics': (L-R) Andee Rubin (United States), Juan Godino (Spain), Sue Kokonis (Australia), Rachel Cunliffe (New Zealand), Glenda Francis (Australia), Kay Lipson (Australia)

new referees and the other for prospective authors. In the panel 'Statistics Education Journals: cooperating not competing', editors of SERJ, Teaching Statistics and Journal Statistics Education (JSE) discussed how to join efforts. The theme 'Working Cooperatively' has many faces. International cooperation was clearly emphasized in sessions under topic 1 'Working cooperatively in Statistics education', topic 9 'An international perspective on Statistics Education' and in other invited paper sessions. Also in the seven plenary lectures, speakers enlightened different aspects of 'working cooperatively'. Statistics education is indeed based on many different disciplines such as statistics, education, mathematics education, psychology, sociology, philosophy which makes interdisciplinary cooperation for research beneficial for the advancement of statistics education research. Recent trends in teaching-learning theories emphasize the role of student activity and social interaction in learning. Cooperative learning is said to stimulate depth of understanding, acquisition of problem-solving skills and formation of positive attitudes toward the subject being taught. The traditional model of teaching as a 'transmission' is changing into a 'transformation' model of learning.

Following the example of ICOTS-6 in South Africa where teacher training activities were for the first time organized as a separate stream throughout ICOTS, the Local Organizing Committee and in particular Lisbeth Cordani, Lilia Carolina Costa and 20 lecturers and observers organized a series of workshops attended by 60 local school teachers. The active approach of these activities was highly appreciated by the participants and they are looking forward for more. All this was possible thanks to financial support by the American Statistical Association and local support by the Universidade Federal da Bahia and the Instituto Anisio Teixeira. By supporting these local workshops IASE aims to stimulate statistics education in that part of the world the conference takes place and aims to attract people to research in statistics education. During twenty four years of continuous critical work and progress in the field of statistics education, the ICOTS conferences have provided international fora for those involved in statistics education to exchange their ideas and to present their research and experiences in teaching statistics. This effort is reflected in the seven volumes of ICOTS Proceedings,

which now constitute a valuable contribution to statistics education as a research discipline and a desired reference for teachers and researchers. In order to enhance the quality of the papers, the International Programme Committee organized onwards ICOTS-6 a refereeing option for people submitting a paper. The papers presented in the ICOTS-7 proceedings are the product of the effort of more than 500 educators, statisticians, psychologists, researchers and lecturers. The more than 220 invited papers of the conference aim to present a synthesis of the main tendencies and developments in statistics education. They have been organized around the following 9 main topics: Working cooperatively in Statistics education, Statistics education at school level, Statistics education at the post-secondary level, Statistics education/training and the workplace, Statistics education and the wider society, Research in Statistics education, Technology in Statistics education, Other determinants & developments

in Statistics education, An international perspective on Statistics education. The proceedings are completed with keynote lectures, about 110 Contributed Papers and about 120 summaries of Posters. A conference like ICOTS only can happen because of the commitment of a large number of people from around the world who are prepared to freely give much time and effort. We would like to pay tribute to the great support we received from so many people who helped in making the conference such a success.

After having ICOTS conferences at different continents, next ICOTS-8 will return to Europe where it started in 1982; this time in Slovenia in 2010 at Ljubljana. Note already the dates in your diary July 11-16, 2010, we are looking forward to meet you there! Visit our website at <http://www.stat.auckland.ac.nz/~iase/index.php>

(This report first appeared in the August 2006 issue of AMSTAT News and is reproduced with permission.)

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Statistical Society of Australia Inc.

Annual Report April 2005 to March 2006

The Society was founded in 1962 as a national “umbrella” organisation to support and further the work of the state statistical societies. The overall objective of the Society is to further the study and application and good practice of statistical theory and methods in all branches of learning and enterprise.

The Society is incorporated in the Australian Capital Territory (ACT). The constitution was revised in accordance with the Associations Incorporation Act 1991 (ACT) on 13 July 2004.

In order to hold Annual General Meeting of the SSAI and the annual meeting of Central Council in association with Australian Statistical Conferences or other mid-year conferences, the financial year for the Society is from 1 April until 31 March. Branches may choose, through their own constitutions, to retain a different financial year.

1. Membership of the Society

At 31 December 2005 the Society had 669 ordinary members, 25 Members at Large 49 student members, 36 retired members, making a total of 773. There are also 19 Honorary Life Members. Equivalent figures (excluding Life Members) since 1994 are 966, 956, 971, 898, 927, 874, 789, 733, 764, 761, 743.

2. AGM and Central Council

The Annual General Meeting of the Society was held on 5 July 2005 at the Australian National University, Canberra. There were two Central Council meetings; one was held on 6 July 2005 at the Australian National University, Canberra, and the second was held on 23 February 2006 at Melbourne Airport. The Executive Committee of the Society has had monthly telephone meetings during the year.

The Central Council for 2005–2006 comprised:

<i>President</i>	K.E. Basford
<i>Vice-President</i>	N.R. Bartlett
<i>Editor</i>	K. L. Mengersen
<i>Secretary</i>	D.E. Shaw
<i>Treasurer</i>	S.R.T. Horn
<i>Accreditation Committee Chair</i>	I.W. Saunders
<i>Circulation Manager</i>	M.A. Adena

Delegates
Canberra Branch
A. Cowling, B. Henderson
New South Wales Branch

C. Badcock, A. Pope, C. Howden

Victorian Branch
B. Phillips, G. Laslett

Queensland Branch
J Eccleston, H Johnson

South Australian Branch
M. Swincer, J Jones

West Australian Branch
J Thompson, A. Munday

Much of the Society’s business is conducted by the SSAI Executive Committee on a monthly basis by telephone hook-up. Members of the SSAI Executive Committee for 2005–2006 were:

<i>President</i>	K.E. Basford
<i>Vice-President</i>	N.R. Bartlett
<i>Editor</i>	K. Mengersen
<i>Secretary</i>	D.E. Shaw
<i>Treasurer</i>	S.R.T. Horn
<i>Section Chairs’ Representative</i>	K.L. Mengersen (co-opted)
<i>Branch Presidents’ Representative</i>	A.J. Branford (co-opted)
<i>Young Statisticians’ Representative</i>	J. Wooton (co-opted)

The Executive Officer, Jane Waslin, attends SSAI Executive Committee meetings as an observer.

3. Association with other bodies

The Society is an affiliated organisation of the International Statistical Institute, with the President as the Society’s *ex officio* member.

The Society is a constituent member of the Australian Mathematical Sciences Council, and through this Council a member of the Federation of Australian Scientific and Technological Societies (FASTS). K.E. Basford represented the Society on the Council.

The Society was represented on the National Committee for Mathematics of the Australian Academy of Science by N. Bartlett *ex officio*.

The Society is a corporate member of the New Zealand Statistical Association.

The Society is a member of the Australian Foundation of Science. S.R. Wilson was the Society’s representative this year.

4. Finances

The Society’s financial affairs for the year are detailed in the Financial Statement.

The capitation fee has remained unchanged in 2005–06. This, with no growth

in member numbers, results in a substantial shortfall on operations, after splitting out strategic activities. The latter comprising workshops, conferences, campaigns and initiatives promoting the Society’s aims as set out in its Strategic Plan continue to run at surplus, but insufficient to balance the operational deficit. In the year steps were taken to reincorporate publishing activity within the society structure, so the Society can present a clearer picture of its finances. This overcomes the chronic issue of balancing two sets of books – one for the society’s core operation and a second for the journal, newsletter and website. In future a capitation fee to ASPAI will apply only for the journal, to be run as a separate entity in partnership with the NZSA; other publishing activity will be represented in the Society’s main accounts and budget. The Society will continue to recover costs for administrative support for the ANZJS.

While reserves have been used over the past four years to build up the Society’s profile and its resources for supporting member initiatives and services, these two realignments point to a financially sound basis for the Society to consolidate, both operationally and its strategic plan activity.

5. Review of Statistics at Australian Universities

In July 2004, Central Council agreed to hold a review of Statistics at Australian Universities. The need for this arose from employers (including universities) expressing concern about the supply of sufficient numbers of suitably-qualified graduates and the widespread frustration being expressed by members in academia as a result of recent changes affecting all universities in Australia.

The review team was led by Professor Adrian Smith of Queen Mary University of London, Professor David Vere-Jones of Victoria University of Wellington, New Zealand and Professor Ian James of Murdoch University. Mr David Whitelaw of the Australian Bureau of Statistics was appointed Executive Officer for the Review. During February 2005, the review team visited each Branch of the Society and met with about 140 people from employers, universities and other organisations. A total of 34 written submissions were made to the Review.

A draft report was submitted to the Society and the Review Steering Group subsequently fed comments back to

the Review Team. A final report was published in hardcopy and electronic form in December 2005. The Society is now considering how best to implement the Review recommendations. Arrangements are being made to discuss the review findings with senior DEST officers and the Minister for Science Education and Training. In particular, steps are being taken to progress the development of an Australian Statistics Education System (ASES) as recommended by the Review.

Sponsorship for the Review was provided by (i) Department of Education, Science and Training, (ii) the Australian Bureau of Statistics, (iii) Roche Products Pty. Ltd. (Australia), (iv) CSIRO and (v) the Australian Prudential Regulation Authority. This support is gratefully acknowledged.

6. The Australian and New Zealand Journal of Statistics

During 2005 arrangements were completed to transfer copy editing and type setting to the publisher (Blackwell) so that ANZJS would become available in an enhanced electronic version. The new electronic version became available with the March 2006 edition of ANZJS and members of SSAI and NZSA were offered the opportunity to discontinue receiving a hard-copy version.

The structure of SSAI/ASPAI is being reconsidered so that financial reporting can be streamlined and NZSA has a more direct formal role in considering non-editorial matters for ANZJS. Editorial matters are being handled very smoothly but consideration of matters with financial consequences needs to be streamlined. Some progress has been made in this direction but more needs to be done.

The Society would like to thank Managing Editor Kerrie Mengersen and Editors Stephen Haslett and Russell Millar and the Editorial Board for their contributions to the smooth production of the journal in 2005.

7. Accreditation

The accreditation process continues to run smoothly thanks to the efforts of the Accreditation Committee and the Society's Executive Officer, Jane Waslin. It meets once a month, generally via telephone conference, and spends a considerable time examining each of the applications and referees' reports to ensure that a high standard for accreditation is established.

A re-accreditation process has been established and re-accreditation is now taking place for those members whose accreditation has expired. Another issue currently under consideration is how to provide better support and professional

development opportunities to existing Accredited members.

At 14 June 2006 there were 134 members with current AStat status and 48 members with GStat status.

We would like to take this opportunity to thank all members of the Accreditation Committee for their efforts.

8. Planning

Central Council is in the process of reviewing the Strategic Plan for 2006–2010 in order to incorporate implementation of the Review of Statistics and changes achieved under previous versions of the Strategic Plan.

9. Public Awareness Campaign

After several years of slow progress, a Public Awareness Campaign was finalized and launched late in 2003. The campaign was developed in consultation with Julian Cribb, and comprises presentations to target groups, a series of advertisements in national and Canberra newspapers, press releases, and a booklet of Success and Disaster stories featuring cartoons by Geoff Pryor. Its twin thrusts are: the need for professionalism in the practice of Statistics; and to support Professional Accreditation, hence its campaign slogan: *Statistics: A Job for Professionals*. The balance of the fund carried from 2004–05 of \$16,224 was used this year for advertisements placed in May and June 2006 in national newspapers.

10. Conferences, Workshops and Symposia

Branches conducted a number of workshops during the year, with support from the central office provided for collection of registration fees and payment of accounts. These workshops were especially successful with very strong support from members and others.

Branch	Workshop	Date	Number of attendees
Canberra	Symposium on Data Linkage	September 2005	71
Western Australia	'R' Workshop	November 2005	33
South Australia	Bayes for Beginners	November 2005	8
Queensland	Miniconference	September 2005	25
Victoria	'R' – 2 days	November 2005	20
Bayesian Section	Topics in the Tropics	September 2005	28

ASC 2006 will be held in conjunction with the New Zealand Statistical Association and hosted by them in Auckland from July 3rd to 6th, 2006

11. Named Lectures

- The E.K. Foreman Lecture was given by Dennis Trewin.

- The Knibbs Lecture was given by Peter Thomson.
- The Belz Lecture was given by Adrian Baddeley.
- The H.O. Lancaster Lecture was given by Caro Badcock.
- The E.A. Cornish Lecture was given by Kerrie Mengersen.

12. Sections

Sections and Chairs for 2005–2006 were:

Bayesian Methods Section	K. Mengersen
Survey and Management Statistics Section	R. Clark
Statistical Computing Section	K. Kumar
Statistics in the Medical Sciences Section	P. Howley
Statistics in the Biological Sciences Section	S. Barry
Statistical Education Section	M. Martin
Industrial Statistics Section	R. McVinish
Young Statisticians Section	J. Wooton
Environmental Statistics	P. Kuhnert (Acting)

Other Sectional and Branch activities have been detailed in the Society's *Newsletter*.

For the Society,

K.E. Basford
President

D.E. Shaw
Secretary

July 2006



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There are a number of positions available within the Group for general analysts to perform statistical analysis and research tasks to support the work of the group. Ideally, these positions would suit recent graduates seeking to expand their knowledge and experience in an important and dynamic area of public policy.

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Applications close: 28 September 2006

DEWR uses an online recruitment system to manage applications for jobs, it can be accessed at: <http://www.dewr.gov.au/dewr/JobsInDEWR/>. These positions will be Canberra based. Applicants must be Australian citizens.

Branch Reports

WESTERN AUSTRALIA

WA Branch Honours Scholarship

The Western Australian Branch would like to congratulate Anthony Traylen on winning the 2006 WA Branch Honours Scholarship consisting of a \$500 cash prize plus a year's membership to the Society. Anthony is currently completing a Graduate Diploma in Statistics from UWA. He had previously completed a Mathematics degree at UWA before deciding to continue his studies in the area of Statistics.

Anthony's high marks in his statistics courses coupled with his interest in pursuing a career in statistics were the key elements that secured him the award. We wish him every success in his future career.



Robust MM inference in mixed linear models

Dr Stephane Heritier from the NHMRC Clinical Trials Centre at the University of Sydney gave the April talk to the WA branch on "Robust MM inference in mixed linear models".

The invitation indicated that Stephane did his PhD studies in Switzerland, the country that brought us fondues, raclette and robust statistics. Expecting a talk given with a Swiss-German accent, I learned on short notice that Stephane is actually French and that he did his PhD in the French speaking part of Switzerland and not in the part that allegedly speaks German. This was quite a pleasant surprise since, after having done my PhD studies in the French speaking part of Belgium and watching

Kevin Kline in the film "French Kiss", the French accent is my second most favourite accent, only (narrowly) beaten by the Indian accent.

Having put my brain into the correct state-of-mind, I could settle back and listen to a most interesting talk. Stephane started his presentation with an example that showed how a few outlying values can exert a high influence on the results of a linear mixed model analysis and how this might lead to wrong conclusions from such an analysis. This is obviously a problem since linear mixed models are commonly used to analyze data in practice.

The problem is, of course, that these models are generally fitted using (restricted) maximum likelihood estimation with the likelihood of the sample being derived under the assumption that the random effects and the error term follow a normal distribution. As it turns out, the resulting estimators, and related significance tests, are quite sensitive to these underlying assumptions. Apparently, real data does not necessarily care about the distributional assumptions that we make in our models (which are meant to reflect the real world), with the errors being particularly uncooperative. This leads to the need of models that are reasonable robust against deviations from their assumptions.

After this motivating example, Stephane introduced us to the work of Copt and Victoria-Feser who recently proposed a highly robust estimator for general linear mixed models. The Copt and Victoria-Feser estimate can easily be computed and also allows the computation of a robust score test. Unfortunately, their proposal cannot be used to define a likelihood ratio type test which is certainly the most direct route to robustify F-tests; which are ubiquitous in hypothesis testing in linear mixed models.

Building on the work of Copt and Victoria-Feser, Stephane proposed two new robust estimators that allow such an extension. These estimators lead to resistant Wald-type tests useful for testing contrasts and covariate effects in linear mixed models. Using simulations and theoretical analysis, the properties of these estimators were illustrated and the advantage of using this robust approach for linear mixed model in the

presence of outlying observations was clearly demonstrated.

Somewhere along the talk, Stephane also mentioned the usual Australian robustniks which clearly demonstrates that robust statistics has indeed spread well beyond the borders of Switzerland. The discussion at the end of the talk centred around the two usual questions. First, why does one need a robust method if outliers are obvious in appropriate plots? Secondly, if one uses a robust method isn't it often the case that what one gains in robustness is lost in efficiency? Stephane valiantly managed to fend off these criticisms and pointed out that, while some robust methods are associated with a great loss of efficiency, the proposed methods have a high efficiency. Some of the usual die-hards continued the discussion over dinner at a nearby restaurant.

Berwin Turlach

Statistical Literacy and Introductory Statistics

Professor Dan Schafer from Oregon State University presented an interesting seminar regarding his views on statistical literacy (the skills and tools for intelligent evaluation of statistical arguments faced in adult life) and introductory statistics courses at universities. Dan introduced his talk by discussing the evolution from 'statistical methods' to the craft of 'statistical data analysis'. Data analysis techniques have grown significantly in recent decades, yet most university courses continue to teach out dated traditional methods that may have little impact in improving levels of statistical literacy.

One focus of Dan's talk was on possible goals of an introductory statistics course to improve statistical literacy. The elusive goal could be considered to be data analytic proficiency for the students, however the craft of data analysis is large and obviously it cannot all be covered in an introductory statistics course. Dan suggested that a course could result in higher levels of statistical literacy if it focused on inductive reasoning and critical thinking of the data based conclusions, rather than simply how to apply a statistical formula or technique with no real understanding of the results it generates. For example, a successful course could be focused on a topic of real

scientific interest and then the answer could be approached using a number of analysis techniques as the course progresses. This would give focus to the *process* of data analysis being used to help draw conclusions, rather than the simply learning data analysis and statistical techniques with little or no understanding as to their practical relevance.

Dan went on to quote Samuel Wilks who paraphrased an HG Wells quote "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write". Whilst Dan doesn't believe that statistics will ever be quite as important as reading and writing, he stressed that adequate statistical literacy is an important life skill. Without it, people are unprepared to be able to interpret results from contradictory health studies, evaluate statistical evidence in courts of law or evaluate research into alternative medicines, as a few examples.

NEW SOUTH WALES

I thought I would take this opportunity to briefly reflect on the year so far and the exciting activities we have organised in the NSW Branch out to the end of the year.

In 2006 the year started with a bang holding a meeting in February for the first time. This allowed us to take advantage of a visit to Australia by Professor Anthony Edwards who was Fisher's last undergraduate student and spoke about some of his recent work on aspects of Fisher's ideas. Details of this session were provided in the last newsletter.

In March, as incoming President, I gave the annual Lancaster Lecture at the Annual General Meeting of the Branch. I spoke on the challenges of working with administrative databases, the talk being motivated by recent projects I have been working on with Medicare data and a database managing patient records in an out-patient setting.

In April, John Robinson, University of Sydney presented an intriguing discussion on the statistical problems that arise in phylogenetics (i.e. evolutionary relationships among species).

In May the new facilities at UTS were used to receive an introduction to geostatistics and its broader applications.

Suresh Tripathi from Covance shared with us his education in geostatistics under the tutelage of Professor Krig (of kriging fame) and examples of work he undertook while consulting to the mining industry.

In June a new city venue, the Women's Club was trialled. I would like to thank Ann Eyland for suggesting and helping me organise this venue and the other members of the Club's Board for their welcome and enthusiasm in sharing with us their haven within the city. Unfortunately I was unable to make this meeting but the feedback I had about the venue was extremely positive. Given the location of this venue in the central business district, the decision was made to hold a talk with a finance flavour. Ramprasad Bhar (UNSW) spoke on approaches to modelling volatility in financial asset prices.

In July, one of our career-young statisticians, Bilyana Brdaroska, discussed her PhD thesis. Her talk was on hormones and depression in men. Bilyana managed herself extremely well while talking to a mainly male audience on a very sensitive subject.

Prior to Bilyana's talk I was also very pleased to be able to present Rodger Robertson with a Service Award.

By the time you are reading this newsletter our August talk will have been held with Professor Matthew England from the Climate and Environmental Dynamics Laboratory (CEDL), University of NSW discussing "Southern Hemisphere Climate Change". Feedback on Matthew's talk will be provided in a future newsletter.

We have tried to use venues which are more pleasant than some of the Spartan ones we have used in the past, with professional caterers for the pre-meeting "drinks and nibbles", in an attempt to make the meetings more attractive as an opportunity to socialise as well as to hear something of professional interest. The cost of this is not enormous and the Branch can afford what is being spent, but there is not much point in going to this trouble and expense if members do not turn up! Unfortunately, attendance at meetings has continued to be depressingly low. However, those who have attended have been exposed to

a broad range of interesting topics, each with its own challenges.

Out to the end of the year there is an exciting array of activities. In September our monthly meeting speaker will be Dr Mu Zu, our AusCan scholar from Canada. While in Sydney Mu will also be visiting a number of universities and presenting a workshop (see details elsewhere).

In October there will also be multiple events. On October 27 there will be a workshop on the challenges of running clinical trials in oncology (see page 4). Also in October I will be visiting the University of New England to act as a judge in the National Schools Statistics Poster competition. While I am there I will be presenting a seminar to the staff and students and thought it would be a great opportunity to try something different. So, our monthly lecture will consist of two speakers linked via video-conference between the University of NSW and University of New England. Greg Falzon, a PhD student at UNE, will speak first from UNE on his work using statistical models to analyse synchrotron images. This work has resulted in finding hitherto unknown molecular changes due to cancers. Our second speaker, Professor Matt Wand (UNSW) will present at UNSW on a topic still to be decided at the time of writing this.

Our final event of the year will be the regular J.B. Douglas Post Graduate Awards Day and I, for one am certainly looking forward to listening to talks from our most outstanding students.

Service Award

At the July meeting of the NSW Branch it gave me (Caro Badcock, Branch President) great pleasure to present Rodger Robertson with a Service Award in recognition of his contribution to the Society at both Branch and Central levels.

Rodger was elected to the NSW Branch Council in 1998, and served as Treasurer until elected as President from 2000 to 2002. Immediately following his term as President, Rodger became Secretary of the Central Council of the Society, in which office he served until the present incumbent, Doug Shaw took over.

Rodger is widely regarded in the NSW Branch as having made a number of important innovations in the way the



Branch was managed by the Council. During his period as President, the Branch widened its scope by becoming less exclusively academic in orientation, stopped giving prizes which drained the resources but seemed to achieve no positive outcome for the Branch and started the J. B. Douglas Award event, which has been one of the major successes for the Branch since then. In short, the Branch became far more entrepreneurial.

Rodger's service to the Society is all the more meritorious because throughout that service he was beset by serious medical problems.

Caro Badcock, Branch President

SOUTH AUSTRALIA

Statistical research adventures in New Zealand

On the last day of May, the SA branch had the pleasure of A/Prof Irene Hudson speak about her contributions to biostatistics, health informatics, global climate indicators and wood science. Irene has returned to Adelaide to become University of South Australia's new Director of Statistical Consulting and Research Services. Irene has history in Adelaide completing a Bachelor of Science with Honours at The University of Adelaide supervised by Professor Alan James. In between, she has worked at various universities, the most recent appointment was at the University of Canterbury in New Zealand prior to moving to Adelaide. Some of Irene's research which has been clinical trials in the presence of non-compliance, health environmetrics and psychometrics, were the focus of her talk.

An interesting example of her work was linking SIDS to climate and pollution. Data collected were from 1968 to 1999.

Her research specifically investigated whether pollution in Canterbury, UK, attributed to high risks of SIDS. The study period included 1989 which had a significant social campaign to prevent SIDS, therefore pre-1989 and post-1989 were considered separately. Some interesting issues with regard to modelling these data were raised. The counts were small with lots of zeros, and seasonality needed to be taken out before identifying real effects of climate. Various Poisson mixture methods were considered which could account for mixed distributions and incorporate serial dependence. This is an area of research Irene is keen to continue which was evident by her call to the audience for potential PhD students! Irene finished her lively overview of past research with interesting discussions with audience members about the future of statistical research and the inter-relationship with statistical consulting.

The Changing Role of the Statistician

The SA branch was very fortunate to have Dr Ray Correll speak at the June meeting, who has recently retired from CSIRO. He was introduced by John Field who has worked with him on and off for 30 years. John gave some background information on Ray, beginning with his studies in botany and then maths, followed by some information on his recent work on environmental risk assessment.

Ray began his talk by discussing the spectrum of statisticians, starting with the pure theoreticians who seem afraid of real

data, closely followed by the theoreticians who propose a model and then search for data to fit the model. At the more practical end of the spectrum are statistical consultants who are sought out by other scientists, often too late in a project, and the collaborators who are investigators on projects and are able to make a bigger impact on the profession. Ray then went on to suggest that statisticians could play the role of team leader, rather than depending on other scientists to obtain funding. His reasoning was that statistical consultants are exposed to a variety of scientific areas in their work and so they would be in a good position to create a multidisciplinary team for a project. Also, statisticians are relevant at each stage of a project and having a statistician as a team leader would ensure statistical input from the beginning.

There are several areas in statistics that Ray feels have been neglected in both teaching and practice, one of them being sampling. He spoke about sampling from his practical experience, indicating that he has found systematic sampling to work better in practice than random sampling. He joked that sampling is 'never as simple as balls in urns', giving an example of water samples from a river where there is no obvious way to define the sampling frame. He also discussed the issue of sample size, pointing out that an estimate of variance is required in the calculation. In practice, this can be obtained from a pilot study but the estimated variance is less stable than the estimated mean and as a result, the calculated sample size



Dr Ray Correll

may be severely over or underestimated. He noted however, that in practice the sample size is usually determined by budgetary constraints rather than statistical calculations.

Ray concluded the talk with his vision for statistics. He would like to see statisticians involved in large projects and having a diversity of roles including project leader, consultant, teacher, mentor and theoretician. The talk was followed by a lively discussion between members of the audience about many of the areas Ray had discussed. We would like to thank Ray for his contribution to the field of statistics during his career and wish him well in his retirement.

Lisa Yelland

VICTORIA

At the Annual General Meeting (AGM) on March 21, the following members were elected to the Victorian Branch Council for 2006: Tristan Barnett (Student Member), Kym Butler, Ian Clark, Derchie Hung, Geoff Laslett (Treasurer), Kay Lipson, Ann Maharaj (Secretary) and Debra Partington. Mervyn Silvapulle was elected Vice President for 2006 and President for 2007-2008. Brian Phillips is in the second year of his term as Branch President. According to the constitution, ten is the maximum number on the Branch Council, but this has not been achieved in recent years. It is pleasing to see a return to the full size in 2006.

Betting on statistics: beating (and joining) the bookies using statistical modeling

The speaker at the March meeting, at which the AGM was held, was Professor Stephen Clarke, from the Swinburne University of Technology Sports Statistics group. His interesting talk discussed the applications of statistical modeling to exploit inefficiencies in betting markets (academic language for making a profit out of gambling).

Stephen began the presentation by showing a video of one his PhD students speaking on 'Today Tonight' about using statistics to predict the winner of the Melbourne Cup. Stephen then explained how important sport is

to business and the economy, with the AFL (Australian Football League) rights worth \$780 million.

The speaker explained that betting in Australia was traditionally limited to horses and dog racing. However the growth in sports betting has seen



Professor Stephen Clarke
Photo: Brian Phillips

opportunities for betting on a range of other sports. The 'head to head' nature of most sporting contests means the bookmaker's percentage is necessarily much lower than is usual in racing, opening the door to profitable betting. Swinburne Sports Statistics has been involved in forecasting match outcomes for over 20 years. The last few years has seen its predictions profitably applied to betting markets. Stephen gave examples of how he and some of his research students have beaten the "bookies" in Australian Rules football, rugby and cricket.

The second part of Stephen's talk discussed how to profit from gambling by actually becoming a bookmaker. Betting on events within a sporting contest (such as the number of runs in each over of cricket) allows an increase in both the bookmaker's percentage and the number of available bets. But the short time interval for posting prices does not allow them to be set by traditional bookmakers. Through a spin-off company, he told how the Swinburne Sports Statistics group has developed models in tennis and cricket that provide prices to the bookmakers for 'betting in running'.

In conclusion, Stephen demonstrated that statistical models can be used to successfully predict sporting events. The

probabilities generated by these models can be used to exploit inefficiencies in sports betting markets. Statistical models can also be used to generate prices in circumstances where traditional price setting mechanisms are not appropriate. Swinburne Sports Statistics predictions are available online at www.swin.edu.au/sport.

Tristan Barnett

CANBERRA

Talk on analytical work at the ABS by Marion McEwin

At the monthly meeting of the Canberra Branch of the SSAI on 30 May 2006, Ms Marion McEwin, Assistant Statistician (or Head) of the Analytical Services Branch (ASB) within the Methodology Division at the Australian Bureau of Statistics (ABS), gave a talk titled "More than just numbers - Analytical work at the ABS". Marion joined the ABS in 1973 after completing a degree in Mathematical Statistics at the University of Adelaide and an Economics degree at the Australian National University. Since then she has worked in many and varied areas of the ABS, including Demography, Labour Force, Family, and Social Indicators.

Marion began by quoting Dennis Trewin in a speech last year that analytical methods are the "next frontier of official statistics". The ABS already has a strong history of analytical work, including seasonal adjustment since the 1950s, national income forecasting since the 1960s, socio-economic indexes and small areas estimation since the 1970s, and, more recently, population, labour force, price and productivity projections. The ABS is an institution which is highly suitable for analytical work, because it has access to much data that is not available to others, and because it has a long-established culture of being objective and impartial. The ASB was formed in 2000 to further enhance the ABS's analytical capacity by way of bringing together a critical mass of resources without the distraction of operational pressures.

Amongst the many products arising from the work of the ASB is SEIFA, standing for Socio-Economic Indexes for Areas. This product was developed

especially for those interested in the assessment of the relative disadvantage of Australian communities. It consists of a suite of indexes calculated using census data and has been calculated for the last four population censuses. For example, the Index of Relative Socio-economic Disadvantage (IRSD) is a weighted combination of 20 variables relating to income, education, occupation, housing, indigenous status, and so on, where the weights are determined using principal component analysis. Another project involves investigating the application of hedonics to house price indexes whose calculation requires the modelling of house price as a function of physical characteristics such as block size and floor size, and of various locational attributes such as distance to shops. Yet another project of the ASB is a study of the dependency between Gross Domestic Product and employment. Marion and her research team have discovered some complex feedback relationships between GDP and employment in Australia. These findings have recently been presented at a conference and are soon to be published.

Talk on continuous time GARCH modelling by Gernot Müller

At the meeting of the Canberra Branch of the SSAI on Tuesday 27 June 2006 Dr Gernot Müller, a Research Fellow at the School of Finance and Applied Statistics (FAS) at the Australian National University, gave a talk titled "Continuous time GARCH modelling". The talk was in part a summary of research conducted recently in collaboration with Professor Ross Maller and Dr Alexander Szimayer, both of FAS.

Gernot began by reviewing GARCH (Generalised AutoRegressive Conditionally Heteroscedastic) stochastic volatility models. These were introduced into econometrics in the mid 1980s and have proven to be a very useful tool for analysing time series. An important feature of GARCH models is that they allow the volatility of a time series to depend on its past by way of a 'feedback' mechanism between mean and variance. Limiting cases of the GARCH model include the random walk process and a discrete time version of the Black-Scholes model.

Financial data has increasingly become available in 'tick-by-tick' or

'microstructure' form. Also, much of the theory for option pricing applications is formulated in continuous time. These facts have led researchers to develop continuous time models, for example continuous time versions of the GARCH model. The most recent such model is the so-called COGARCH model in Klüppelberg, Lindner and Maller (2004). This model involves only one source of uncertainty, a Lévy process, and - unlike some others which have been proposed, such as by Nelson (1990) - preserves the important feedback mechanism between mean and variance in GARCH models.

COGARCH models can be fitted in a number of ways, including the method of moments (MOM), quasi maximum likelihood (QML), and Markov chain Monte Carlo (MCMC) within a Bayesian setting. Gernot described the relative advantages and disadvantages of these approaches and reported the results of some simulation studies designed to assess bias and mean square error. His broad conclusion is that QML is the method of choice, because it permits easy calculation of estimates whilst allowing for irregularly spaced observations. In comparison, the MOM can only be used with regularly spaced observations, and the MCMC approach requires additional distributional assumptions and a rather complex and computer-intensive Metropolis-Hastings algorithm.

Gernot concluded by applying the COGARCH theory to a dataset consisting of 2529 irregularly spaced log-returns on the Australian Stock Exchange and presented estimates of the

model parameters using QML with a first order Euler approximation. In the ensuing discussion, it was suggested that perhaps the MOM could also be applied with good results to an irregularly spaced times series after first interpolating over a regularly spaced grid.

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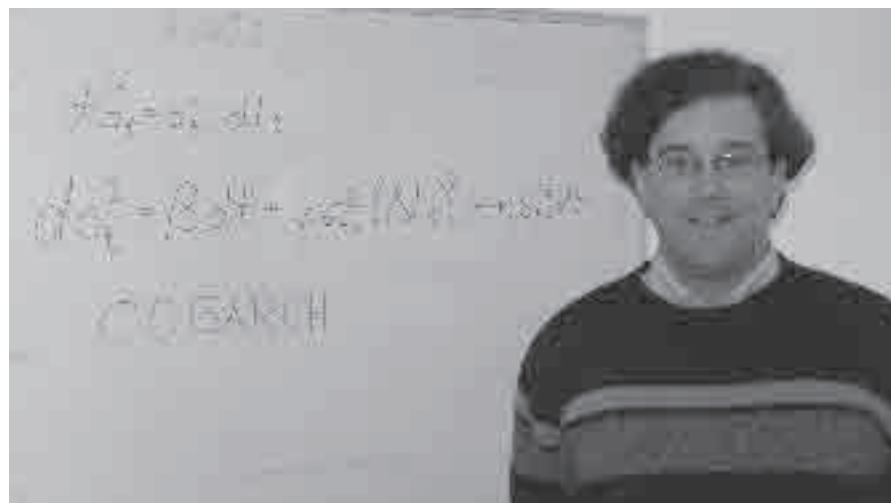
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The Canberra branch will hold a Bayesian Statistics workshop, presented by Kerrie Mengersen, on September 14-15 (see www.statsoc.org for further details).

Talk on psychiatry and numbers by Andrew Mackinnon

At the meeting of the Canberra Branch of the SSAI on Tuesday 25 July 2006 Professor Andrew Mackinnon gave a talk titled "Psychiatry and numbers: The attempt to measure things that cannot be seen and which may not exist". Andrew is currently the Deputy Director of the Centre for Mental Health Research (CMHR) at the Australian National University.

Andrew began by mentioning that many people know very little about psychiatry and even less about research in that area. However, psychiatric illness is a major burden on society. For example,



Dr Gernot Müller

about 20% of Australians suffer a mental disorder in any one year. Also, in terms of DALYs (disability-adjusted life years), depression and dementia rank third and fourth, respectively, amongst the leading causes of disability amongst Australian women. (In first and second place come ischaemic heart disease and stroke; and the rankings for depression and dementia in men are eighth and tenth.) These statistics come from a report produced by the Australian Institute of Health and Welfare in 1999. Also, unipolar major depression is the leading cause of disability worldwide and accounts for 10.7% of all years lived with a disability.

The CMHR was established in 1974 and commenced work in January 1975, with funding from the National Health and Medical Research Council, but its name at the time was the Social Psychiatry Research Unit (SPRU). Under its head, Professor Scott Henderson, SPRU conducted a number of epidemiological surveys which were innovative because they were based on data from the whole community. In contrast, many other studies at the time focussed solely on data from clinics and so showed only the tip of the iceberg. SPRU changed its name to the Psychiatric Epidemiology Research Centre (PERC) in 1996, and then to CMHR in 2000. An example of the many projects run by SPRU/PERC/CMHR is the Canberra Longitudinal Study of the Elderly. This 12-year study began in 1990 and among its aims is to identify the risk factors for cognitive decline in normal ageing as well as factors associated with positive outcomes.

A major problem with psychiatric research is ambiguity in definitions of psychiatric conditions given the absence of biological tests or other objective markers of illness, and the fact that conceptualizations of illness can change over time, often dramatically. For example, pellagra was once considered to be a definite psychiatric illness but is now known to be caused simply by deficiency of Vitamin B.

One potentially useful way to quantify psychiatric conditions is via latent variables. These are unobserved variables which may be thought to 'drive'/cause/explain a set of observed variables and their interrelationships. Andrew has been using latent variable models in much of his work. He illustrated the use of



Andrew McKinnon

modern maximum likelihood methods for factor analysis which reveal the complexity underlying the structure of both symptoms and diagnoses of schizophrenia. He also demonstrated the use of item response theory in the development of psychometric tests.

Borek Puza

QUEENSLAND

May meeting

At the May meeting Martin Oldfield, General Manager of QR National Coal Operation and Adjunct Fellow, School of Enterprise, University of Melbourne gave a presentation titled "Variation and its impact on supply chain robustness - how statistics can help us."

Martin began explaining a generic bulk supply chain and the changes in recent years in the operation of supply chains particularly the change from a government supported to a commercially sustainable bulk transport business.

He explained how the efficiency of a supply chain is governed by the interdependencies among customer expectations, operational variation, buffer size, cycle times and the capacity of the system.

As an example, Martin used the transportation of bulk raw sugar from mills near Townsville to the Townsville Port. The sugar production varies, rail transit time varies and queuing delays at the Port occur if trains are running out of schedule. Fixed length trains running to disciplined time tables were committed

to each of the four sugar mills and the system is designed to normally run with empty wagons on the train. The choice of system capacity is based on statistics, and is typically able to cater for 85-90% of peak production rate on a continuous basis. The daily dynamic capacity of each service (train capacity x the number of daily cycles) was designed to service up to 4 days of maximum production at each mill. The number of empty wagons was a lead indicator of the dynamic capacity utilisation - if the trains returned full to the port more than 4 trains in sequence, the system was unlikely to cope with demand. Even though there was spare capacity, savings in assets were achieved and the service was improved. The benefits of this unorthodox system were:

- Bins never overflowed due to a failure of the rail operations.
- Mill managers forgot about the fact that a bin and train are at the back end of their production processes.
- The daily ordering process disappeared with order taking and supervisory staff redeployed.
- Throughput increased by 60% to 1.2 mtpa.
- The wagon fleet size was reduced by 25% from 121 to 93 avoiding a \$8.5m rolling-stock investment.
- The track upgrade did not proceed avoiding a significant infrastructure investment.
- The number of train crews required to service the operations was significantly reduced.
- Train Crews preferred to work on the Sugar service as it was predictable and regular.

The audience appreciated this interesting talk from Martin and asked many questions.

Ross Darnell

June meeting

On Tuesday 6th June, Dr Cathal Walsh spoke at Gardens Point QUT on the use of latent class analysis in the identification of syndromes in mild Alzheimer's disease. Cathal is a Lecturer in the Department Statistics at Trinity College, Dublin. His research interests are in the areas of Bayesian reliability, medical statistics, statistics in finance, stochastic modelling and computational methods.

At the meeting he spoke of his work on a latent class analysis which he used to identify syndromes within Alzheimer's disease (AD). The data employed consisted of information on symptoms from 240 first visit patients with mild AD referred to a centre in Dublin concerned with differential diagnosis of dementing illness. Latent variable models have been used extensively in the social sciences. Fitting the model in a Bayesian framework permits a close examination of how the method works in general and Carthal provided an informative description of the methods employed and a number of insights about the data and technical aspects of the methodology. In particular, the label switching problem was discussed and solutions presented. Graphical summaries of the posterior distribution were also presented in detail.



Dr Cathal Walsh presenting his talk in June at Queensland University of Technology

July meeting

Following on from the ASC/NZSA 2006 Statistics Connections Conference in Auckland, three speakers repeated their presentations to the local branch at the University of Queensland

Firstly, Dr. Ian Wood of QUT spoke on 'Bias in classification based on gene expression data'. This was joint work with Peter Visscher (QIMR) and Kerrie Mengersen (QUT). He described a form of selection bias that occurs when the accuracy estimated using cross-validation or similar methods are also used to select the optimal value of a parameter or perform variable selection. Results of fitting classifiers to a simulated dataset and two datasets from the bioinformatics literature, namely Khan et al (Nature Medicine, 2001, pp.673-679) and Sharma et al (Breast Cancer Research, 2005,



Ross McVinish, Ian Wood and Peter Baker at the July meeting.

pp.R634-R644), were employed in the study. The misinterpretation in reported estimates of accuracy (one minus the error rate) was also discussed. Ian's research interests cover a range of topics in statistical modelling and applications in genetics, including analysis of gene expression data, building comparative genetic maps, and meta-analysis of association studies. He has broader interests in Bayesian statistics, machine learning and optimisation.

Next Ross McVinish, also of QUT School of Mathematical Sciences, spoke on Bayesian approaches to goodness-of-fit testing. He considered two Bayesian approaches to goodness of fit testing for parametric families of distributions. The first was the classical Bayesian approach based on the ratio of posterior probabilities, or equivalently the Bayes factor, while the second approach was a comparative one employing the expected distance to the parametric family assuming the parametric family is true. Both approaches require a prior to be specified on the space of all density functions and Ross focused on how this prior is specified so that the resulting tests are practical and possess good asymptotic properties.

Finally, Peter Baker (CSIRO Mathematical and Information Sciences) spoke on joint work with Karen Aitken and Phil Jackson (CSIRO Plant Industry) on a Bayesian method to assess marker dosage in sugarcane and other autopolyploids. CSIRO is currently engaged in breeding programs for sugarcane by developing molecular markers and searching for quantitative trait loci (QTL) affecting

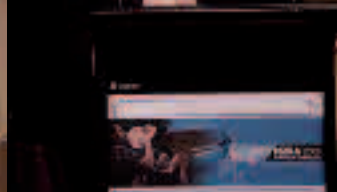
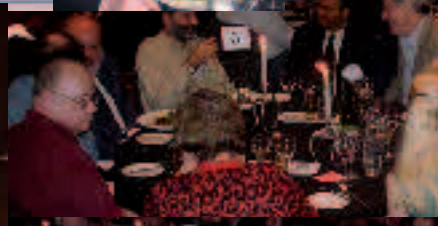
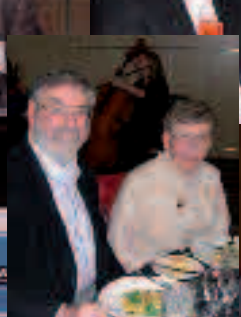
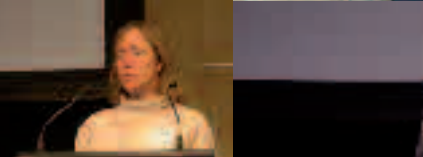
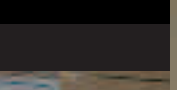
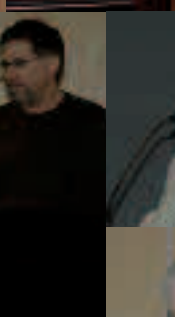
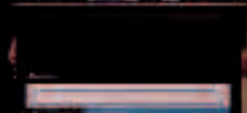
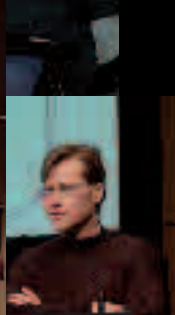
important traits such as sucrose content and disease resistance. Currently, the breeding program is particularly topical given the recent outbreak of sugarcane smut in Queensland. By finding markers associated with genes affecting a quantitative trait, breeders can use marker assisted selection to speed up the breeding of new varieties. Like many plants of agricultural importance, sugarcane is a polyploid in that it has more than two copies of each chromosome per cell and this makes the genetics more complex than that of diploids. Peter proposed a mixture model for assessing the number of copies of the dominant allele, or doses, of an AFLP marker which is the first step in the QTL analysis of sugarcane. While the results are preliminary, it appears that this new method has advantages over older ones in that it not only provides a posterior probability distribution of the number of doses but also appears to fit the data better.

Miranda Mortlock

MASA

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ASC/NZSA 2006 'Statistical Connections'

A visual summary of the conference, through the eyes of our photographers Harold Henderson, Rod Ball and Alan Branford (as arbitrarily selected by Michael Adena) is shown on pages 22 and 23 of this newsletter.

The conference covered an extraordinary range of topics and attracted a large number of statisticians, primarily from Australia and New Zealand and the Pacific region.

The four keynote speakers were:

- David Donoho (Stanford University), who provided a fascinating insight into the characteristics of data summaries for high dimensional data - the data are almost always on the edge rather than in the middle
- Ray Chambers (University of Wollongong), whose Foreman Lecture outlined methods and results in models which use auxiliary data (from outside a survey) to enhance the inferences from a survey
- Peter Hall (Australian National University), who showed how dimension reduction using principal components analysis is an essential step in functional data analysis
- Xiao-Li Meng (Harvard University), who provided an intriguing example with a simple 2 x 5 table of counts in which the true information was much less than expected from the total count, as an introduction to the concept of self-efficiency in the analysis of incomplete data.

With over 50 invited speakers and up to six parallel sessions, there was plenty of variety and interest for all the attendees.

The conference was fortunate to have generous sponsors. The principal sponsor, SAS, supported the Welcome Reception and lunch on Monday, with the major sponsor, Roche, providing the internet cafe throughout the conference and Monday's morning and afternoon teas. The Australian

Bureau of Statistics, The Royal Society of New Zealand, the New Zealand Institute of Mathematics and its Applications and Eli Lilly also sponsored the conference, with Eli Lilly supporting lunch on Tuesday. The Australian Bureau of Statistics, the Australian Mathematical Sciences Institute, Statistics New Zealand and Victoria University of Wellington were speaker sponsors.

Morning and afternoon teas and lunch were enlivened by our exhibitors: Alexander Technologies, Blackwell Publishing, CSIRO Mathematical and Information Sciences, Eli Lilly, Hoare Research Software, New Zealand Statistical Association, Palisade Asia Pacific, SAS, Space-Time Research, SPSS New Zealand, Statistical Society of Australia, Statistics New Zealand and Thomson Learning.

The success of this conference reflects the great efforts of the organising committee (David Scott, William Dunsmuir, Neville Bartlett and Harold Henderson), chaired by David Scott.

Pitman Medalist of the Statistical Society of Australia for 2005

John Darroch was presented with the 2005 Pitman Medal at the Welcome Reception of the July conference by Kaye Basford, the President of the Statistical Society of Australia.

Throughout his statistical career, John made important contributions to statistical methodology, particularly in the analysis of categorical data. He also enriched the statistical community through his teaching and research at Flinders University between 1962 and 1996 and his involvement in the Statistical Society, including a term as national president. He also contributed to the wider community, with a key submission and testimony to the very public and high profile Splatt Royal Commission in South Australia in the 1980s.

In his response to the presentation, John described the great pleasure and satisfaction

he derived from his statistical career and his students, and assured us that there is indeed plenty of life outside the statistical world after retirement!

A full citation will appear in the ANZJS.

Pitman Medalist of the Statistical Society of Australia for 2006

Daryl Daley was presented with the 2006 Pitman Medal at the Closing Ceremony of the July conference by Kaye Basford, the President of the Statistical Society of Australia.

Daryl has made important contributions to statistical theory in several fields, such as point processes, queuing, branching and epidemics. He also applies his statistics, with public contributions to the debate on scaling of secondary education results, for example.

His deep involvement in the Statistical Society includes ten years as its secretary and treasurer and ten years as the technical editor of the journal, a largely unrecognised 'back-room' activity that ensured high standards for the technical presentation (and content) of the papers in the journal.

After receiving the medal, Daryl provided another view on Edwin Pitman when he described how Daryl's uncle, who had no statistical or university background, had known Edwin Pitman independently of Daryl's connection through statistics and the University of Melbourne.

A full citation will appear in the ANZJS.

Young Statisticians at the conference

The ASC/NZSA joint statistical conference in Auckland was attended by numerous young statisticians from a wide range of diverse backgrounds. Many excellent talks were given by young statistician speakers demonstrating that there are plenty of good career options out there for early career statisticians. Attending conferences such as ASC/NZSA are very beneficial for young statisticians. Many appeared to be having a great time and were clearly networking and getting good insights by attending talks given by more experienced statisticians.

The young statisticians section would like to thank the SSAI for all of its support and encouragement. We would also like to take this opportunity to announce the upcoming national 2 day young statisticians conference to be held in Canberra in April 2007. This again will be a great networking opportunity for early career statisticians.

Janice Wooton and Ian Wood



(L-R) Elizabeth Darroch, John Darroch, Kaye Basford (photo: Alan Branford)



Daryl Daley (photo: Harold Henderson)