The Statistical Society of Australia

News

SSAI

ASC 2012

It is now only a few months before ASC2012 takes place. The 21st Conference of the Statistical Society of Australia (http://www.sapmea.asn.au/conventions/asc2012/index.html) will be held at the Adelaide Convention Centre from 9 – 12 July 2011 and the 8th Australian Conference on Teaching Statistics (OZCOTS 2012) will be held at the same venue July 12-13. The theme for the ASC, *Celebrating 50 Years of the Society*, provides opportunities for presentations on a wide range of topics and recognises the role that statistics plays in all areas of modern life. The OZCOTS 2012 theme is *Statistics Education for Greater Statistics* and covers all aspects statistical education.

In this issue

Photos: South Australian Tourism Commission

EDITORIAL
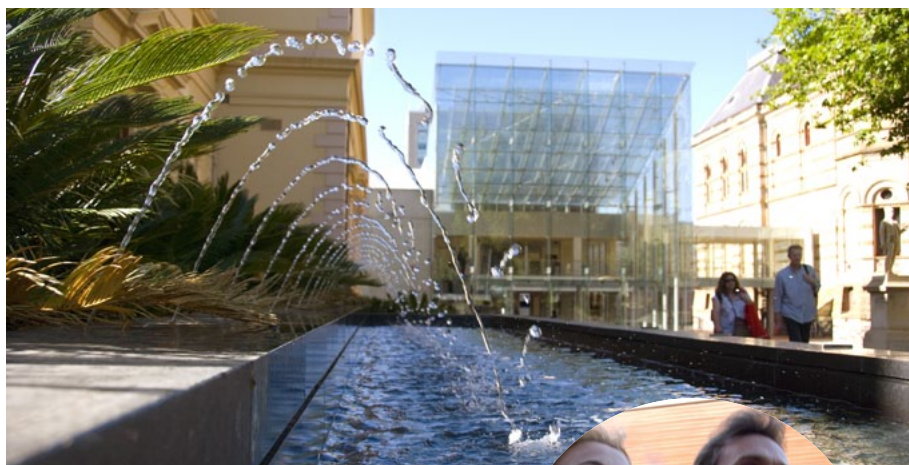
Welcome to the first edition of the Statistical Society of Australia newsletter for 2012. The editors hope that you'll find this a useful and diverting publication with reports of past events, notices of meetings to come, and items of general statistical interest from all around Australia. Of course this newsletter can only publish the material you send in, and all Society members can contribute. Please feel free to send letters, notes, articles, reports, and especially photographs of events in your area or other statistical ideas that would be of interest to members.

A new designer, Lisa Tilse, has begun work with the Society's newsletter and we hope you like the new style.

The cover story of this issue is all about the Society's flagship event, the conference in Adelaide in July. We hope that a large number of you will be able to come and share in the talks and other activities during the week.

Looking further ahead, we will be helping to celebrate 50 years of the Statistical Society of Australia through the Newsletter. What else was going on in 1962? The Best Picture at the Academy Awards was awarded to *Lawrence of Arabia*. Elvis Presley's single *Return to Sender* was topping the charts. St George won the NSW Rugby League competition, Essendon won the VFL and Even Stevens won the Melbourne Cup. Robert Menzies was prime minister and John F. Kennedy was president of the United States. A loaf of bread cost about 18 pence and new car purchasers were lining up for models such as the EJ and EK Holden. Your memories of 1962 would be welcome in this anniversary – please submit your contributions to the Editors by the copy deadline for each issue.

We look forward to communicating with you through the newsletter this anniversary year.

Best wishes from the editorial team,

Alice Richardson

and **Michael Adena**

1962: the EJ and EK Holden

CALL FOR ABSTRACTS

ASC 2012

Contributions relevant to all areas of statistical theory, methodology and applications are welcome. Proposals now are invited for:

• Oral presentations, 15 minutes plus 5 minutes for questions;
• Posters, maximum size vertical 100cm (39 inches) x horizontal 120cm (47 inches).

Abstracts for ASC 2012 must be submitted online at http://www.sapmea.asn.au/conventions/asc2012/abstracts.html

by 16 March 2012. All abstracts will be reviewed by the Program Committee and authors notified of the outcome no later than 20 April 2012. Authors of accepted abstracts for both oral presentations and posters must register for the conference by 30 April 2012 in order for their presentation to be scheduled in the final program. Accepted abstracts will be published in the conference handbook. Please note that detailed instructions for the format and submission of abstracts are available at http://www.sapmea.asn.au/conventions/asc2012/abstracts.html.

OZCOTS 2012

Contributed papers relevant to any area of statistical education are welcome. Accepted papers will be published in the online Conference Proceedings with an oral presentation of length 15 minutes plus 5 minutes for discussion to be given at the conference. All abstracts will be reviewed by the OZCOTS editors and authors notified of the outcome within a week of receipt of abstracts. Authors can also elect to have their paper refereed. Papers accepted as meeting refereed standards will be designated as such in the Proceedings.

Abstracts for OZCOTS 2012 must be submitted online at
http://www.sapmea.asn.au/conventions/asc2012/abstracts.html

Abstracts from authors wishing to have their papers refereed must be received by 31 January 2012, and papers to be refereed must be submitted by 29 February 2012. Authors will receive referee reports by 30 April, 2012. Abstracts from authors not wishing to have their papers refereed must be received by 29 February 2012. Final versions of all papers must be received by 31 May 2012. Authors of accepted papers must register for the conference by 31 May 2012 in order for their presentation to be scheduled in the final program and their paper to appear in the proceedings.

Please note that detailed instructions for the format and submission of abstracts are available at http://www.sapmea.asn.au/conventions/asc2012/ozcots_abstracts.html.

NOTE TO AUTHORS

As a commitment to attend and support the conference, presenters of accepted submissions are required to register for the full-time program or the day of their presentation. All costs of attending the conference, including the registration fee, are the responsibility of the presenter.

SUMMARY OF KEY DATES

	ASC 2012	OZCOTS 2012
Submission of Abstracts	16 March 2012	31 January 2012 29 February 2012
Submission of Refereed Papers (OZCOTS only)		29 February 2012
Submission of Final Papers (OZCOTS only)		31 May 2012
Notification of Acceptance of abstracts	20 April 2012	within one week of receipt
Presenter Registration	30 April 2012	31 May 2012

CONFERENCE ORGANISERS

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Fullarton, South Australia 5063
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Fax: +61 8 8274 6000
Email: asc2012@sapmea.asn.au
Web: www.sapmea.asn.au/conventions/asc2012

World class keynote speakers, supported by leading local and national statisticians, will present the latest developments in the theory and application of statistics at ASC:

Anthony Davison

Anthony Davison is Professor of Statistics at the Ecole Polytechnique Fédérale de Lausanne, Switzerland. After obtaining a BA in mathematics at the University of Oxford in 1980, he obtained an MSc (1981) and PhD (1984) in statistics from Imperial College London. Before moving to his current post in 1996 he worked at the University of Texas at Austin, at Imperial College London, and at the University of Oxford, where he also held an EPSRC Advanced Research Fellowship. He is a fellow of the American Statistical Association, of the Institute of Mathematical Statistics and of the Royal Statistical Society, and an elected member of the International Statistical Institute. In 2009 he was awarded a laurea honoris causa in statistical science by the University of Padova. His research interests cover a wide range of topics in statistical theory and methods, including statistics of extremes, likelihood theory and resampling methods. Since 2008 he has been editor of *Biometrika*.

Christl Donnelly

Christl Donnelly received her doctorate from Harvard School of Public Health in biostatistics. After three years lecturing statistics at the University of Edinburgh, she joined Roy Anderson's Wellcome Trust Centre for Epidemiology of Infectious Disease in 1995. She moved with colleagues to Imperial College London to form the Department of Infectious Disease Epidemiology in 2000. She is now one of the Principal Investigators in the MRC Centre for Outbreak Analysis and Modelling within the department. She has analysed epidemiological data and provided evidence to policymakers on BSE/vCJD, bovine TB, foot and mouth disease, SARS and influenza. She is an author with Neil Ferguson of the book *Statistical Aspects of BSE and vCJD: Models for Epidemics* and with Sir David Cox of the book *Principles of Applied Statistics*, as well as over 150 academic journal publications.

Peter Donnelly

Peter Donnelly is Director of the Wellcome Trust Centre for Human Genetics and Professor of Statistical Science at the University of Oxford. He grew up in Australia and on graduating from the University of Queensland he went to Oxford as a Rhodes Scholar. He held professorships at the Universities of London and Chicago before moving back to Oxford in 1996. His early research involved stochastic models in population genetics before he became more interested in the statistical problems of biomedical genetics. His current work focuses on understanding the genetic basis of common human diseases, human demographic history, bacterial evolution and infection, and the mechanisms involved in mammalian recombination.

Peter played a major role in the HapMap project, an international collaboration that followed the Human Genome Project in studying genetic diversity in worldwide populations, and he currently chairs the Wellcome Trust Case Control Consortium (WTCCC), a large international collaboration studying the genetic basis of more than 20 common human diseases and conditions in over 60,000 people. He is a Fellow of the Royal Society and of the Academy of Medical Sciences.

Sophia Rabe-Hesketh

Sophia Rabe-Hesketh is a professor at the Graduate School of Education and Graduate Group in Biostatistics at the University of California, Berkeley. She is also Professor of Social Statistics at the Institute of Education, University of London. Her research interests are in generalized linear mixed models, latent variable models, and longitudinal data analysis. She has developed a modeling framework called GLLAMM (Generalized Linear Latent and Mixed Modeling) and written a publicly available software package called gllamm (http://www.gllamm.org/) to estimate these models. The software has been used in over 400 different journals. Sophia Rabe-Hesketh has published six books, including Generalized Latent Variable Modeling and Multilevel and Longitudinal Modeling Using Stata (both co-authored with Anders Skrondal) and over 100 papers and book chapters. She is co-editor for Statistical Methods in Medical Research and associate editor for Psychometrika and Statistical Modelling.
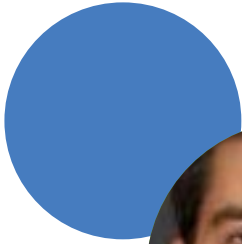
John Storey

John Storey received his PhD in statistics with a PhD minor in genetics from Stanford University. He has been a faculty member at UC Berkeley and University of Washington. He is currently an Associate Professor at Princeton University in the Lewis-Sigler Institute for Integrative Genomics and the Department of Molecular Biology, where he and his lab members develop and apply statistical methods for genomics.

Roderick J. Little (Foreman Lecturer)

Roderick J. Little is Associate Director for Research and Methodology and Chief Scientist at the U.S. Census Bureau, and Richard D. Remington Collegiate Professor of Biostatistics at the University of Michigan, where he also holds appointments in the Department of Statistics and the Institute for Social Research. He has over 250 publications, notably on methods for the analysis of data with missing values and model-based survey inference, and the application of statistics to diverse scientific areas, including medicine, demography, economics, psychiatry, aging and the environment. In 2005, he was awarded the American Statistical Association's prestigious Wilks Medal for research contributions, and he gave the President's Invited Address at the Joint Statistical Meetings. He is an elected member of the International Statistical Institute and the Institute of Medicine of the U.S. National Academy of the Sciences, and a Fellow of the American Statistical Association and the American Academy of Arts and Sciences.

OZCOTS 2012 will include a program of contributed papers and forum discussions as well as keynote addresses by:

Jessica Utts

Jessica Utts is a Professor of Statistics at the University of California, Irvine, transferring there in September 2008 after many years at the University of California, Davis. Her interests include statistics education and applications of statistics to a variety of areas, most notably parapsychology, medicine, and transportation. In 1995, with Professor Ray Hyman (University of Oregon), she prepared a U.S. Government sponsored report assessing the statistical evidence for psychic functioning in research which received wide-spread media coverage. She is an advocate for the promotion of statistical literacy, the recipient of two distinguished teaching awards and the author of three

statistics textbooks with an emphasis on statistical literacy, including Seeing Through Statistics and with Robert Heckard Mind On Statistics. Jessica has served as Chair or President of The Committee of Presidents of Statistical Societies (COPSS), the Western North American Region of the International Biometric Society (WNAR), The Caucus for Women in Statistics, the Board of the Consortium for the Advancement of Statistics Education (CAUSE), the Section on Statistical Education of the American Statistical Association and the Development Committee for Advanced Placement Statistics. She is a Fellow of the American Statistical Association, the American Association for the Advancement of Science, the Institute of Mathematical Statistics and the Association for Psychological Science. She has appeared on numerous television shows, including Larry King Live, CNN Morning News and ABC Nightline, discussing her research in parapsychology.

Kaye Basford

Kaye Basford is a Professor in Biometry at the University of Queensland, where she is currently also President of the Academic Board, and was Head of the School of Land, Crop and Food Sciences 2001-2011. Kaye is currently President of the *International Biometric Society,* and is a past president of the Statistical Society of Australia Inc, and the Queensland Zone of the *Australian Institute of Agricultural Science and Technology*. Her academic focus has been on the analysis and interpretation of data from large-scale multi-environment plant breeding experiments, such as those conducted by the international agricultural research centers. Her first book, Mixture Models with Geoff McLachlan, presented the theory and application of the mixture method of clustering, while her second, Graphical Analysis of Multi-response Data with John Tukey, detailed various graphical approaches to analysing multi-response data with applications to plant breeding. Kaye has published extensively in the peer-reviewed literature (13 book chapters and 103 journal articles), produced 5 statistical packages, 11 commissioned reports and 22 technical reports, and has supervised or co-supervised 20 PhD and 3 MPhil graduates. Kaye has attracted competitive research funds from government and industry bodies, including the high-profile Australian Centre for Plant functional Genomics (ACPFG), a joint $41M initiative based in Adelaide, but with nodes in Melbourne and Brisbane. In 1998 Kaye was awarded the highest possible accolade from the Australian Institute of Agricultural Science and Technology – the Australian Medal for Agriculture, and in 2006, she was awarded a Fellowship with the Australian Academy of Technological Sciences and Engineering for having developed statistical methods that are used world-wide to improve the efficiency and effectiveness of crop breeding programs.
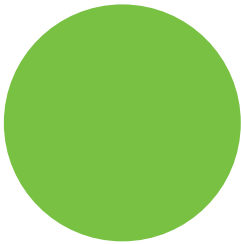
EVENTS

LOGISTIC REGRESSION AND SURVIVAL ANALYSIS IN EPIDEMIOLOGICAL RESEARCH TRAINING COURSE

16 - 20 April 2012, Baha'i Centre of Learning,
1 Tasman Highway, Hobart, Tasmania

INTRODUCTION TO NETWORK META-ANALYSIS (MIXED TREATMENT COMPARISONS)

Presented by Professor George A. Wells
1st - 2nd May 2012, Sydney

SALFORD ANALYTICS AND DATA MINING CONFERENCE 2012

Insight For Data Enthusiasts
24-25 May 2012, San Diego, USA

SURVEY MICHIGAN

at the 65th annual Summer Institute
in Survey Research Techniques
4 June-27 July 2012

INTERNATIONAL STATISTICAL ECOLOGY CONFERENCE 2012

3-6 July 2012, 40 minutes outside of Oslo, Norway

8TH WORLD CONGRESS IN PROBABILITY AND STATISTICS (JOINTLY ORGANISED BY THE BERNOULLI SOCIETY AND IMS)

9-14 July 1012, Istanbul, Turkey

AUSTRALIAN STATISTICAL CONFERENCE 2012

9-12 July 2012, Adelaide, SA
Celebrating the SSAI's 50th anniversary!

INTRODUCTORY ANALYSIS OF LINKED DATA

Presented by Professor C.D'Arcy J. Holman
13-17 July 2012 in Adelaide

XXVITH INTERNATIONAL BIOMETRIC CONFERENCE

Organized by the Biometric Society of Japan
26-31 August 2012, Kobe, Japan

AUSTRALASIAN APPLIED STATISTICS CONFERENCE (GENSTAT AND ASREML)

(Formerly known as the Australasian GenStat Conference)

4-7 December 2012, Queenstown, New Zealand.
Young Statisticians Conference 2013
February 2013, Melbourne
Details tba

NATSTATS 2013

12-14 March 2013, Brisbane

THE 59TH WORLD STATISTICS CONGRESS

25-30 August 2013, Hong Kong, China

PRESIDENT'S COLUMN

Kerrie
Mengersen

Welcome to the 50th anniversary year of SSAI. The year is only young, but the Society has been busy on many different levels. Some of the highlights of our endeavours are reported below.

1. Promote our Profession. Preparations for ASC 2012 are in full swing and the conference is now open for registrations. The Conference theme is "Celebrating 50 Years of the Society". We have an impressive line-up of excellent keynote speakers that you can look forward to meeting at the conference. We hope that you can participate in this important event. Please visit the website via the SSAI homepage (http://www.statsoc.org.au) or go to http://www.sapmea. asn.au/conventions/asc2012/index.html to find out more information and to register.

Plans are also being made for the YSC 2013, which will be held in February in Melbourne and celebrate the "International Year of Statistics". A call for volunteers for the planning committee has been sent out and I would like to thank all of those who responded.

In early February I represented the SSAI at the "Maths for the Future Forum" organised by AMSI. The keynote speaker was Professor Celia Hoyles, former mathematics advisor to the British Government. It was enlightening to hear such a positive story about the turnaround in mathematical sciences at schools and universities in England, and to learn about some of the activities that had underpinned the reversal in trends. Speakers at the forum included Chief Scientist Ian Chubb, Dr Ron Sandland (former Deputy Chief Executive of CSIRO), Chris Evans (Minister for Tertiary Education, Skills, Science and Research) and other representatives from government, education, business and government. The key messages were about the importance of mathematical sciences at all levels of our society; the need to improve awareness of this importance among students, employers and the community; the need to increase the supply of mathematical scientists in Australia; and the need to improve training and support of our maths teachers. These messages were strongly reinforced by Professor Brian Schmidt, winner of the 2011 Nobel Prize in Physics, who spoke at the conference dinner. You can find more about this event elsewhere in the Newsletter. If you would like further information or would like to comment on aspects of the event, please contact the SSAI office (eo@statsoc.org).

2. Review and revise the SSAI Strategic Plan and Financial Plan. As you are aware, we have started to work on a review of our Strategic and Financial Plan and I would like to thank those of you offering your time to join the panel. It is not too late to send us your comments or suggestions. You will find a copy of the current Strategic Plan on the SSAI website (http://www.statsoc.org.au/about-ssai.htm).

I am also delighted to announce that we have signed our first institutional membership agreement with the CSIRO. As part of this agreement the CSIRO will support the SSAI with $20,000 per year for a period of four years, with the opportunity for renewal; please contact the SSAI Office if you would like further information about the terms of the agreement. This sponsorship will flow towards the ASC in even numbered years and towards the Young Statisticians conference and Branch events in odd numbered years. This is an important milestone for the SSAI and we hope to be able to sign similar agreements with other institutions. We are grateful to CSIRO for its continued support of our Society.

As a result of the popular CPD program run by the SSAI over the last few years, as well as a very successful ASC 2010 and careful budgeting, SSAI's financial situation is now on a solid footing. Agreements such as the one with CSIRO will help to consolidate this.

3. Support and promote the Society's groups. We have recently appointed Assistant Chairs for each Section with the aim of assisting the Chairs to progress communication and activity among members within the respective Sections. Thanks go to Young Statisticians Jegar Pitchforth, Suyun Kang, Jannah Baker, Luisa Hall and Charisse Farr for taking on these roles. To keep up-to-date with the Sections' activities and news, please check the respective web pages on the SSAI website from time to time. Remember that the input of all members is warmly welcomed in Section activities: if you have any information that you think would be of interest to Section members, or if you would like to make a comment or suggestion about Sections, please contact the Section Chairs or the SSAI Office.

While you are on the SSAI website, you may also want to read our "Latest News" page recently created and maintained by our new media officer, Zoe van Havre. If you have any news that you think may be worth mentioning on our news page, please email it to the SSAI office (eo@statsoc.org.au).

4. Expand and consolidate linkages between SSAI and other professional societies within Australia and internationally. SSAI continues to be represented in the National Committee of Mathematical Sciences and the Australian Committee for Heads of Mathematical Sciences. Recent endeavours of these Committees have included upgrading the category of Australia's membership with the International Mathematical Union, and drafting a decadal plan for mathematical sciences in Australia. As President of SSAI, I was recently nominated to serve as a member of the Executive of ACHMS. Our Society is also actively engaging with AMSI and the Australian Mathematics Society.

SSAI is planning to engage in two major international events in 2013: the International Year of Statistics, and Mathematics of Planet Earth 2013. IYStat is being organised by the International Statistical Institute (ISI) as a global partnership of societies and organisations to promote the importance of statistics; see http://isi-web.org/news/2013-international-year-of-statistics-iystat for further details. MPE2013 is an initiative launched by the North American Mathematical Sciences Institutes; see http://www.mpe2013.org for further details. In collaboration with AMSI, our colleague Societies, universities, CSIRO and business and government sectors, we hope to develop a comprehensive programme of research activities, courses, theme days, seminars and so on. If you have any ideas, or if you know of events that could be included in the programme in 2013, please let us know via the SSAI Office.

5. Review and revise what we deliver as a Society to our members and how members engage with the Society. We are increasingly receiving requests from different sources for recommend-ations of statisticians to take on certain tasks. The SSAI website has a great search facility for accredited statisticians. Simply tick the box of the area of expertise which you are looking for, and a list of names appears. Please feel free to mention this facility when you are asked for recommendations.

Recently we have had problems with our website and plans for the creation of a new and better one are on the way. A first meeting of the new website design committee was held. If you would like to offer ideas or suggestions on what you expect from SSAI's website, please email your comments to the SSAI Office, and we will take them into consideration.

SSAI now has the facility to hold webinars or web conferences. We are keen to have regular web sessions, so if you or anyone you know have an idea for an interesting talk, please contact the SSAI office.

We look forward to hearing from you!

Kerrie Mengersen
(SSAI President)

FROM GEOFF PRINCE, THE AMSI DIRECTOR

The national forum Canberra, February 7-8 2012

Maths for the future: Keep Australia Competitive was conceived to influence policy makers as part of AMSI's role as advocate for mathematics and statistics. We wanted to create new alliances with the corporate and agency worlds to publicise both the state of the discipline and its importance to national productivity growth. It came at a time when AMSI believed that the HECS discount for mathematics, statistics and science would be replaced with more direct measures to encourage enrolments. As it happened the HECS discount was simply cancelled and the funds counted as budget savings. And, as is now well known, Ian Chubb, the Chief Scientist, was commissioned by the PM to advise on replacement measures by the end of February 2012. So our timing became impeccable! Not only was the roll call of speakers impressive but our discipline's voice was heard loud and clear at a time when policy makers were keen to listen.

Professor Celia Hoyles, former mathematics advisor to the British Government, set the agenda when she spoke about initiatives employed in England that have improved standards, reversed teacher shortages and increased mathematics enrolments. It was Celia's 2010 presentation to the Australian Council of Heads of Mathematical Sciences and her work on the 2010 AMSI Review that convinced many of us that coordinated action on a number of fronts was needed in Australia.

Celia Hoyles and
Kerrie Mengersen

mathematical sciences in Australia in a speech which focussed on the indispensible contribution we have made and will make to Australian public, individual and commercial life. Ron was followed by Ian Chubb who made clear his deep concern for quality of the school room experience in mathematics and science.

Over the next day and a half we heard from senior figures in government agencies, research institutes and private enterprise about the extraordinary impact of mathematics and statistics in areas from weather forecasting, defence projects, disaster management to disease control. A number of these presentations will appear in the public domain over the next month. The range and quality of these talks inspired the forum participants and the level of excitement grew palpably. Kim Beswick, President of the Australian Association of Mathematics Teachers, spoke at the end of the first day about the necessity of changing the perception of mathematics for school students and the challenges that this brings to teachers. I was particularly struck by her

statement that "what we do in classrooms needs to more closely resemble the work of mathematicians". You will be able to hear and see Kim's presentation and the others at the AMSI website soon.

Brian Schmidt's widely reported speech at the forum dinner on Tuesday night was a high point. He ranged over statistical uncertainty and climate change, his own mathematical work and the mathematical core of many professions with examples from his own extended family. Most importantly he reflected on education:

"We are not there yet - too many of our kids leave school without a core numeracy. Too many of our kids - who are able and willing to excel at Maths - are taught by teachers without the level of competency required for the subjects they teach. Solving this skills shortage has to be our highest priority. Our kids cannot afford to have the opportunities lost - that result from having a poor mathematical education - and the nation can ill afford to lose talent which is in such short supply."

Three politicians spoke at the forum: Senator Chris Evans, Minister for Tertiary Education, Skills, Science and Research; Sophie Mirabella, Shadow Minister for Innovation, Industry and Science and Christopher Pyne, Shadow Minister for Education, Apprenticeships and Training. Chris Evans, in a speech informed by direct family experience, dwelt on the shortages of teachers, academics and researchers and the strategic importance of the discipline. A very strong statement about the discipline later appeared on his website. Sophie Mirabella also addressed the importance of mathematics and statistics but was cautious about the extent of future coalition financial support. Christopher Pyne spoke of the oppositions plans for school funding. The school education minister, Peter Garrett, was unable to attend but Celia and I had a private meeting with him during the forum in which she briefed him on aspects of the UK situation.

The forum concluded with a round table discussion and the participants issued a communiqué. Rather than specify a comprehensive list of potential policies and actions for the various stakeholders we made two recommendations to underpin future measures: the appointment of a national advisor and the establishment of a five-year awareness campaign targeting school and university students, parents, careers and mathematics teachers, the general public and Australian private and public enterprise. Without co-ordination and promotion the forum felt that the effectiveness of public policy would be compromised.

Finally, I have to publicly record some thanks. Celia Hoyles first of all, who not only opened the forum and tirelessly spoke to the press but had private meetings with politicians and policy makers. The speakers were all wonderfully generous with their time and Brian Schmidt deserves special mention because of the depth of his commitment at a very hectic time for him. AMSI's staff outdid themselves: Simi Henderson, the event organizer, Emma Bland, our media and communications officer and Anne Nuguid, our executive assistant. Jan Thomas provided wisdom accumulated from many campaigns. The sponsors of the forum were the Australian Bureau of Statistics, the Australian Council of Deans of Science, the Australian Mathematical Society, the Australian Mathematics Trust, CSIRO's Division of Mathematics, Informatics and Statistics, Science and Technology Australia and we thank them for their financial support.

The forum communiqué is published separately in this edition and you can keep up to date with post forum developments at www.amsi.org.au
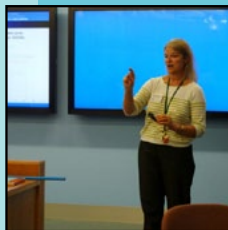
Geoff Prince,
AMSI Director.

Kerrie Mengersen

Photos: www.danielspellman.com

AMSI
AUSTRALIAN MATHEMATICAL
SCIENCES INSTITUTE

AMSI Sponsored
Workshops

Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing
13-17 February 2012, University of New South Wales

The Mathematical Implications of Gauge-String Dualities (part 1)
5-9 March 2012, University of Adelaide

International Number Theory Conference in Memory of Alf van der Poorten
12-16 March 2012, University of Newcastle

The Mathematical Implications of Gauge-String Dualities (part 2)
19-23 March 2012, University of Adelaide

2012 AMSI/ANU/UQ Graduate Winter School
2 - 13 July 2012, University of Queensland at Brisbane

International Workshop on Operator Theory and Its Applications
16-20 July 2012, University of New South Wales

Nonlinear Dynamical Systems
28-30 September 2012, La Trobe University

See more events and info at
www.amsi.org.au/events.php

Next funding round close dates
1 March 2012
15 June 2012
7 September 2012
1 December 2012

Applications may be made throughout the year for *Special Theme Programs* and *Hot Topics Workshops*. Delegate funds are available through member travel accounts.

Wednesday 8th February, 2012

FORUM COMMUNIQUÉ

The AMSI national forum, *Maths for the future: Keep Australia competitive*, Canberra 7-8 February 2012, has come as the Chief Scientist is considering measures to address major challenges in mathematics and science.

In order to anchor the future policies and actions of governments, the universities, schools, businesses and the professions, we the participants, representing stakeholders in these key areas, recommend the following to the Australian Government and to the Chief Scientist:

• The appointment of a national mathematical sciences advisor to advise, coordinate and promote policy initiatives.

• A five-year national awareness campaign for mathematics and statistics targeting both the school and higher education sectors and the general public. The campaign will showcase the mathematics that underpins our modern economy and culture, highlighting the importance of school mathematics studies in a wide variety of careers, and encouraging the provision of effective advice on subject choice at secondary and post-secondary levels. Professional development for both mathematics and careers teachers is essential for the success of this campaign.

These recommendations are based on the following considerations:

• Giving Australian children access to a high quality mathematics education prepares and inspires them to take up challenges in science, engineering and the mathematical sciences. This access is being hampered by a significant shortage of mathematically prepared teachers. A concerted and immediate effort by governments, the teaching profession and the universities is required to guarantee the supply of suitably qualified mathematics teachers.

• Maintaining Australia's international competitiveness relies heavily on a strong mathematical skills base. A 30% decline in enrolments in intermediate and advanced Year 12 mathematics subjects over the past 15 years is choking graduation rates in the mathematical sciences to levels far below the OECD average. This impedes the training of mathematics teachers, reduces the staffing of mathematics and statistics departments and restricts the supply of PhD graduates. The Commonwealth, States and the universities must act together to reverse this trend.

• Mathematicians and statisticians must work together to communicate the importance of our discipline to the Australian public. The extensive range of careers pursued by mathematical sciences graduates remains unknown to school students and their parents, as does the critical utility of school mathematics in trades and professions.

• Mathematical sciences PhD graduates are well prepared to address key challenges in the Australian workforce, but demand for high-level mathematical skills far outstrips supply. This situation compromises productivity growth and hampers our competitive advantage in the world economy. Specific and targeted measures by government and universities are required to improve retention rates in postgraduate courses in the mathematical sciences.

For Interview

Professor Geoff Prince

AMSI Director

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ISOSS ELECTS A NEW PRESIDENT

The 11th biennial Islamic Countries Conference on Statistical Sciences (ICCS-11) has elected Professor Ali S Hadi of The American University of Cairo (AUC), Egypt as the new President of the Islamic Countries Society of Statistical Sciences (ISOSS). He became the President-elect in December 2009. He takes over the role of President from Professor Shahjahan Khan, University of Southern Queensland, Australia who held the position from 2005 to 2011. Ali is currently a Distinguished University Professor and a former Vice Provost at AUC. He was also a former Head of the Department of Social Statistics at Cornell University, USA where he is currently a Stephen H. Weiss Presidential Fellow and Professor Emeritus.

The conference was held at the University of Management and Technology (UMT), Lahore, Pakistan from 19-22 December 2011. The conference attracted a large number of delegates and participants from Australia, Africa, South East Asia, Middle East, Europe, and North America. Unfortunately, due to the current situation in Pakistan many of our colleagues from the West who registered for the conference could not participate in it. The Higher Education Commission of Pakistan provided free accommodation for a large number of international and out of city participants in its newly built Guest House in Gulberg III, Lahore, Pakistan.

The theme of the conference was "Statistics for Strategies of Development". The speakers in the opening session discussed different aspects of the application of Statistics in the modern world. In his talk, the Rector of the UMT, Professor Hassan Sohaib Murad, focussed on the dominant role of Statistics in business and industry. He also emphasised the need of Statistics for Business Executives and the inclusion of courses on quantitative methods at the undergraduate level. The Founding President of ISOSS and Rector of National College of Business Administration and Economics (NCBA&E), Professor Munir Ahmed, gave a brief description of the genesis of ISOSS and explained the need for unity of scientists to enhance the harmonious development of knowledge for the benefit of the mankind. Professor Ali Hadi expressed his appreciation of the ISOSS team in Lahore for doing an excellent job to organise an international conference with very short notice. In his speech, Professor Shahjahan Khan, outgoing President of ISOSS, explained the stages of development of Statistics and its wide range of applications in almost all areas of research, modern science, business and every walk of life. He also thanked everyone who helped build the ISOSS House in Lahore, and helped organise four international conferences during his term as the President. The Vice-President of ISOSS, Professor Mohammad Hanif Mian expressed his appreciation of support from everyone, especially the sponsors, UMT and NCBA&E, and participants from home and abroad.

The inaugural keynote address was presented by Ali Hadi. He entertained the audience through showing varieties of graphs to explain the relationship among a large number of variables on the parallel-coordinate while speaking on "Multi-Class Data Exploration Using Space Transformed Visualization Plots". Other keynote addresses include '"Statistical Meta-analysis of Ordinal Categorical Data" by Shahjahan Khan (Australia), "Universally Optimal Designs in Blocks of Size Three" by Munir Akhtar (Pakistan), "A Brief Review of Geoinformatics Analysis on Poverty Data in Indonesia" by Asep Saefuddin (Indonesia), and "Improved Estimation in Simple Linear Regression Model with Autocorrelated Errors" by Bashir Khan (Canada).
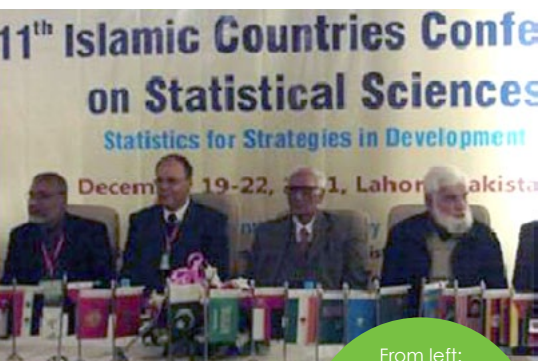
From left: Shahjahan Khan (Australia), Ali S Hadi (Egypt), Munir Ahmed and Muhammad Hanif Mian (Pakistan)

Section of the male participants at the Gala Dinner of ICCS-11 at ISOSS House

In the Business Session the proposal for the creation of a Centre of Excellence in Statistical Research was approved, in order to train young statisticians of the OIC member states. Participants agreed that Kuala Lumpur can be the venue of the proposed Centre which may pull together the available resources of the University of Malaya, University Putra Malaysia and University Kebangsaan Malaysia. Any affiliated national statistical societies/associations of the OIC member states will be recognised as ISOSS chapters. An International Board of Directors will be formed involving regional representatives to enhance the future growth and activities of ISOSS.

The new President of ISOSS, Ali Hadi, emphasised the importance of increasing the membership of ISOSS, strengthening its activities, stability, and sustainability through regular sponsorship and increased collaboration with organisations with similar objectives and professional goals. The Gala Dinner of the conference was held at ISOSS House. Many participants were very impressed to see the ISOSS Headquarters for the first time. Nameplates of the people who donated funds for the construction of the House were displayed at the entrance of the newly built office. The building was completed in early 2011.

A very exciting day tour to one of the largest salt mines in the world was organised on the last day of the conference. Khewar Salt Mine is about 3 hour drive from Lahore (towards Islamabad) and was discovered in 326 BC. The 17 storied mine has an area of 110 square km, all inside an ordinary looking mountain. The main visiting spots are located in levels 5 and 6, which are 2km inside the mountain and accessed by a special rail train. The miners have been extracting salt from the mine for the last 300 years. The participants of the tour were very happy with the arrangements and the exhibits in and around the mine.

It was announced that the next ISOSS conference (ICCS-12) will be hosted by Qatar University in Doha, Qatar, from 19-22 December 2012. It may be noted that originally the ISOSS conferences were held in the even years but due to some unavoidable reasons the last several conferences could not be held in even years. However, from 2012 ISOSS plans to organize its biennial conferences in even years in order to alternate with the ISI (Netherlands) conferences in odd years.

A post conference workshop on "Successfully publishing research articles in international journals" was presented by Professor Shahjahan Khan at the NCBA&E on 23 December 2011. Eighty academics and researchers including PhD and MPhil students participated in the day long event. The workshop covered various aspects on preparation of research articles, selection of appropriate journal, formatting and referencing of articles, online submission, review and revision process, citation of published articles, impact factor of journals, international collaboration and co-authors, and H and G indices.

Reported by

Shahjahan Khan,
University of Southern Queensland, Australia;

and

Ali S Hadi,
The American University of Cairo, Egypt.

A group of women participants of ICCS-11

Section of the delegates of ICCS-11 at ISOSS House

XXVIth International Biometric Conference

Organised by the Biometric Society of Japan,Japanese Region of the International Biometric Society

August 26-31,2012
Kobe International Conference Center Kobe,Japan

Invitation

We are pleased to welcome you to Kobe for the XXVIth IBC in Kobe, Japan. As always, It will bring together participants from all over the world working in academic institutions, government agencies, and industry to exchange ideas on the latest advances in biometry, biostatistics and bioinformatics. It will also be an occasion to meet old and new friends, and the chance to visit historical cities such as Kobe, Kyoto, and Nara.
(Toshiro Tango, Chair Local Organizing Committee)

About Kobe

Kobe, located almost in the center of Japan, is known as a city having a unique style with the exotic atmosphere in Japan, which has been affected by the foreign cultures and flourished as the international port since old days. Kobe boasts the Rokko Mountains richly endowed with nature and has flourished as the hot spring street such as Arima since old days. Kobe is also known as the gourmet street (Kobe beef, Nada Japanese sake, wine and sweets), as well as the fashion street with the sophisticated image.

About Conference Venue

IBC 2012 will be held at the Kobe International Conference Center within the Kobe Convention Center Complex, located on Port Island, an artificial island in Kobe. It features a combination of extensive conference facilities, modern and affordable accommodations, and a rapid and efficient transportation system.

Access to KOBE

Closest International Airport	
Kansai International Airport（KIX）	
Bay Shuttle Felly + Port Liner	40min
Limousine Bus + Port Liner	80min
Shuttle Taxi	80min

Access Via Other Japanese Airports	
Tokyo（Narita International Airport）（NRT）	
NEX & Shinkansen	60min & 2hr 48min

Conference Organization

Organizing President
Kaye E. Basford, University of Queensland, Australia

International Programme Committee Chair
Christine McLaren, University of California, USA

Local Organizing Committee Chair
Toshiro Tango, Center for Medical Statistics, Japan

Scientific Programme

・Opening ceremony and IBS Presidential address
・Full programme of invited oral sessions
・Contributed oral and poster sessions
・Sessions highlighting the society's publication, Biometrics and JABES
・Pre-conference short courses

Social Programms

Sunday 26	Welcome gathering at KICC
Monday 27	Civic reception in Kobe City Center
Tuesday 28	Optional evening social activities
Wednesday 29	Range of social excursions (one-day)
Thursday 30	Conference dinner

For constantly updated information, please see the website
http://www.secretariat.ne.jp/ibc2012/

celebrating 50 years

ANZJS EDITORS' COLUMN – FEBRUARY 2012

The last two years have seen some major changes at ANZJS. The majority of these have happened out of sight, or are only partially on view, so I thought it may be useful to give a glimpse behind the scenes.

The most obvious example is the ScholarOne (S1) paper submission system http://mc.manuscriptcentral.com/anzjs. S1 is now the only conduit for submitting manuscripts to ANZJS. This electronic system is standard, and similar to that for other journals. It operates independently of the journal's publisher. Simplicity of use has been questioned at times, by associate editors and referees as well as authors. However, for the editors, and I trust for you as authors, it has been a marked improvement over the previous fragmented and sometimes opaque system for paper tracking that it has replaced. Those of you with questions about your submitted but not yet published papers will I hope have noticed a marked improvement.

Production has changed too. Wiley (USA) and Blackwell (UK) have merged. Previously, Blackwell was the publisher and production editing took place in Australia through a senior Blackwell editor in Melbourne. Under Wiley-Blackwell, ANZJS production editing has been shifted to Singapore, we have already had two different production editors there, and overall authority for journal production is now at Wiley-Blackwell in New Jersey, USA. Other publishing aspects are now in the UK: the senior editor at Wiley-Blackwell is now in Oxford and the marketing is run from Chichester. Recently, Wiley-Blackwell indicated they intended to move production yet again, this time to Manila in the Philippines. The ANZJS editors' strong objections have been listened to for now, but continuing change seems to be inevitable. Every change of location and personnel has thrown considerable additional editing work back onto the ANZJS editors, particularly on Neville Bartlett our technical editor. There has also been teleconferences and extensive ongoing correspondence with Wiley-Blackwell, and I have found it necessary to proofread entire issues from Wiley-Blackwell several times rather than just once very near the end of the production process. A number of extra steps, such as regular telephone conferences with the production team in Singapore, have been now put into the process. In August, I visited the senior editor at Wiley-Blackwell in Oxford during research leave in the UK. I also visited the Wiley-Blackwell production team in Singapore on my way to Cambodia for the UN World Food Programme in early December. This personal contact should help improve workload control, at least until the next change of production editor at Wiley-Blackwell, when our proofreading load will almost certainly climb again. These changes have had consequences for you the ANZJS authors and readers too: we are currently behind in the production schedule for 2011, but we are (along with Wiley-Blackwell) doing our best to catch up, subject of course to maintenance of technical standards.

The annual editors' face-to-face meeting took place in Canberra in late November. Previous meetings have been in Melbourne but, with none of the Wiley-Blackwell editors for ANZJS located there any more, we have greater flexibility about location. We had initially planned to meet in New Zealand this year, but Mervyn Silvapulle had to go into hospital (from which I am pleased to be able to tell you he has now returned home) and, to raise the chances he could attend, holding the meeting in Australia instead was then an obvious decision. Mervyn has now stood down as Theory and Methods editor, and in recognition of overall workload has been replaced by two people, Michael Martin and Martin Hazelton. Since Michael, and Alan Welsh our current

Applications Editor, are both in Canberra, having our meeting there was an obvious choice. In terms of editorial structure, this means Martin and Michael are the new Theory and Methods Editors, Alan is the Applications Editor, Petra Graham is the Book Review Editor, Neville is Technical Editor, and until mid-2012 at least I remain Managing Editor. I also must note here and thank the forty or so Associate Editors, since without the referees, and of course the authors and readers, ANZJS would not be in operation.

A final comment, not strictly editorial but nevertheless relevant. The publication contract with Wiley-Blackwell, which is being negotiated through the ANZJS Management Committee, is close to final agreement. Those of you at the NZSA and SSAI AGMs this year will remember motions were passed agreeing to the signing. There has been a delay however, due to concerns about the currencies specified in the draft contract through which payments to and from Wiley-Blackwell were to be made. Marked currency movements now seem to be characteristic of foreign exchange markets. The original arrangement would have severely disadvantaged ANZJS and hence SSAI and NZSA. A solution has now been agreed in principle: all transactions will happen in a single currency. The likely prognosis is that the publication contract will be agreed and signed reasonably soon.

Stephen Haslett
Managing Editor, ANZJS
anzjs@statsoc.org.au
19 February 2012

AMSI-SSAI Lecturer 2012

Christian P. Robert
Université Paris-Dauphine

Professor Christian P. Robert's research areas cover Bayesian statistics, with a focus on decision theory and model selection, numerical probability, with works cantering on the application of Markov chain theory to simulation, and computational statistics, developing and evaluating new methodologies for the analysis of statistical models. He has written or co-written eight books on Bayesian statistics and computational methods, as well as over 150 research papers in these areas and their applications.

Lecture tour dates to be announced:
www.amsi.org.au/robert.php

For enquires email Simi Henderson on simi@amsi.org.au

AMSI — AUSTRALIAN MATHEMATICAL SCIENCES INSTITUTE

S S A I Statistical Society of Australia Inc.

MEMBER NEWS

Distinguished Professor Noel Cressie will join the University of Wollongong in 2012.

Professor Cressie is a world-leading researcher in statistical modelling and analysis of spatial and spatio-temporal data, in Bayesian and empirical-Bayesian methods, and in environmental sciences. The methodology has been applied in areas of "big science", such as remote sensing of the earth on a global scale, regional climate modelling in space and time, and Bayesian statistical exposure modeling from sources to biomarkers. Other research areas include spatial command and control, disease mapping, medical imaging, and ice-stream dynamics.

Noel was born in Fremantle, Western Australia. He received a Bachelor of Science degree with first class honours in Mathematics from the University of Western Australia and MA and PhD degrees in Statistics from Princeton University.

He is currently Professor of Statistics, Distinguished Professor of Mathematical and Physical Sciences, and Director of the Program in Spatial Statistics and Environmental Statistics at The Ohio State University. He was previously Professor of Statistics and Distinguished Professor in Liberal Arts and Sciences at Iowa State University.

Noel is the author of around 250 refereed articles and of three books, including *Statistics for Spatial Data, revised edition*, 1993.

Professor Cressie is a Fellow of the American Statistical Association, the Institute of Mathematical Statistics, and the Spatial Econometrics Association. He is also and Elected Member of the International Statistical Institute. Other honors include: being awarded the Distinguished Achievement Medal of ASA's Section on Statistics and the Environment; the Twentieth Century Distinguished Service Award in Environmental Statistics; the Distinguished Scholar Award of The Ohio State University; and the 2009 Fisher Award and Lectureship from the Committee of Presidents of Statistical Societies. He is on the Institute for Scientific Information's (ISI) elite list of highly cited researchers.

Director of CSSM, Professor David Steel said "This is a fantastic appointment for us and will continue the development of our strong research capacity in Applied Statistics".

Professor David Steel,
Director,
Centre for Statistical and Survey Methodology
University of Wollongong

celebrating 50 years

TEACHING STATISTICS IN THE PACIFIC ISLANDS

In November 2010 the American Statistical Association established a new Outreach Group entitled the Friends of Australasia. The continent of Australasia currently comprises 35 million people living in Australia, New Zealand, and the Pacific Islands. This group has the objective of promoting mutual collaboration between statisticians in the US and these regions, and has a special focus on providing training in statistics to our colleagues in the developing nations in the Pacific. One vehicle for increasing communication throughout these diverse regions is the email list for the Friends of Australasia proudly hosted by the American Statistical Association (see http:// community.amstat.org/Friends_of_Australasia/Join1).

Statistics plays a key role for our friends in the Pacific. According to the Dean of the Fiji School of Medicine, statistics is the technical skill needing the second-most attention to development and education within countries such as the Pacific Islands (where the importance of statistics only comes second-place to building technical expertise in human resources). The ICHSPI conference series was established to meet these international needs, while also enabling international researchers the opportunity to enjoy the beauty and culture of the Pacific Islands.

The First International Conference for Health Statistics in the Pacific Islands was held in Fiji on the 5th to the 8th of July 2011. This conference hosted 50 delegates from the Pacific Islands (Fiji, Solomon Islands, Guam, New Caledonia, Marshall Islands, the Northern Mariana Islands, and Hawaii) and 15 delegates from Australia, New Zealand, and the USA. As this was the first conference in this annual series it was truly ground-breaking with respect to bringing together statisticians, health professionals, and associated researchers and staff from this diverse region and the international community.

The conference was divided into two streams – an introductory stream for clinical researchers seeking to develop a solid foundation in statistics, and an advanced stream for statisticians in the region eager to connect with statistical skills that can only be sought in the international community.

Plans for the 2012 conference (renamed as the Joint Oceanic Conference for Statistics and Information Systems, JOCSIS) are well underway and will be held in Suva, Fiji, in July 2012.

This conference series is jointly organised by members of the Friends of Australasia, Statistics Without Borders, the Statistical Society of Australia, the Australian Development Agency for Statistics and Information Systems, and the New Zealand Statistical Association. For further details about this conference

program (including how to get involved) please email the Conference Chair Mark Griffin at m.griffin@adasis-oz.com or view our website at http://community. amstat.org/friends_of_australasia.

This article was originally published in the November 2011 issue of "Amstat News" and is reprinted with the kind permission of our colleagues at the American Statistical Association.

Note: The newly formed SSAI Section for International Engagement is the arm of the SSAI working with this conference series. The next conference will be held in the first week of July in Fiji - details can be found on the Friends of Australasia website. The SSAI Section for International Engagement would love to hear from new speakers who would like to attend this conference. Please contact Mark Griffin at m.griffin@adasis-oz.com.

Mark Griffin

SURVEYS AND MANAGEMENT SECTION

Statistics and Evaluation

The drive towards evidence-based policies and decisions – whether in government or for large organisations outside it – should be good news for the statistics community. But is it? The commitment to (better) statistics in consequence has seen renewed investment in major survey and data projects, and to a limited extent the hint of a reverse of the conspicuous decline in employment of data base and survey skills close to policy areas of government. But only a hint; the farming out of research has seen close alliances between policy arms of government and a few key centres of policy research in the corporate and academic sectors, by definition at a distance from the data resource . Statisticians have been retained in a maintenance capacity to service the production of 'evidence' framed in terms of research agendas.

Having got that off my chest, there is now the opportunity for fruitful collaboration between this rump of the profession (well represented I hope among prospective active participants in the S&M Section) and the somewhat more recent splendid regiment of evaluators, those people usually within an organisation whose remit is to test what is working, and to advise management on the health and direction of its spending programmes. The evaluators are represented professionally by the Australasian Evaluation Society, whose activities parallel ours (without our mathematical baggage but with cross-Tasman enrichment). Where there is potential for crossover is in the areas of methods of evaluation; professional ethics; training; and jointly sponsored events.

One such candidate event is being put forward for Canberra in July, immediately after the ASC (and taking advantage of an ASC visiting speaker's presence in the country), namely a seminar on the re-engineering of the US Bureau of Labour Statistics' Survey of Income and Program Participation. It is hoped that this would attract people from both communities on a subject with dual resonance.

Further such possibilities will depend on you, and what you would be interested in attending or organising. Let me know. Stephen.horn@fahcsia.gov.au

Stephen Horn

NSW BRANCH NEWS

The 12th Annual J.B. Douglas Postgraduate Awards were held on Wednesday 23rd November, 2011 at the Macquarie Graduate School of Management. The event was sponsored by UTS CenSoC, University of Wollongong CSSM, UNSW School of Mathematics and Statistics and by The University of Sydney Discipline of OME and School of Mathematics and Statistics. Seven PhD students - Ian Renner, Emi Tanaka, Ingo Bentrott, Chris Pardy, Mohammad-Reza Namazi-Rad, Nuttanan Wichitaksorn and Kevin Murray - gave twenty minute presentations on their PhD work so far in front of an audience of three judges and around 20 to 25 interested spectators. Thanks to Prof William Dunsmuir, who was ambushed but still accepted the invitation to judge on the day, and to Claire Ringland from the NSW Bureau of Crime Statistics, who acted as judges together with Richard Gerlach. The students' presentations were of very high quality and standard and there was no hint of the audience being bored or falling asleep during the afternoon: better praise than that seems impossible. The standout speaker was Ian Renner (UNSW) who was awarded the 1st prize on the day, while Emi Tanaka put in an excellent effort and was awarded the 2nd prize for the day.
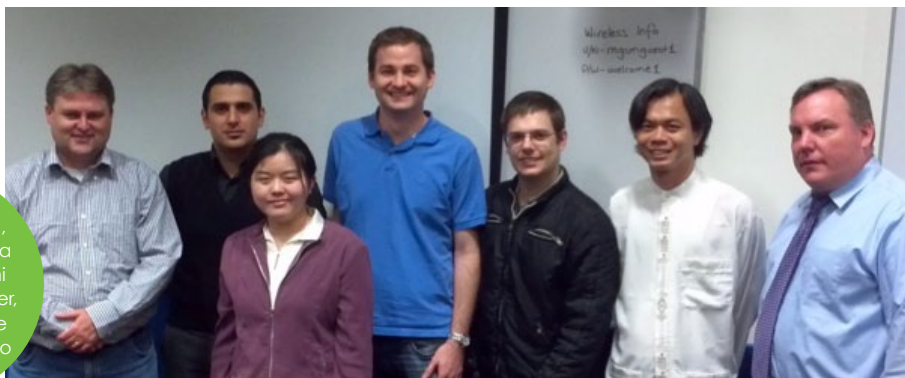
From left: Richard Gerlach, Mohammad-Reza Namazi-Rad, Emi Tanaka, Ian Renner, Chris Pardy, Nate Wichitaksorn, Ingo Bertrott.

A great shot of our past President, Eric Beh

All presenters will receive official certificates for their participation to thank them for their efforts on the day.

Directly following the JB Douglas annual awards, well OK after a few drinks first, the NSW Branch Annual lecture was held, delivered by Dr Don Weatherburn PSM FASSA on "Statistical applications in crime and criminal justice". Don is the Director of the NSW Bureau of Crime Statistics and Research, is an Adjunct Professor in the School of Social Sciences and International Studies at the University of New South Wales and is a fellow of the Academy of Social Sciences in Australia. He gave an entertaining overview of several areas where statistics had affected public policy decisions around crime-type issues over his career to date. The studies described included evaluations of the effect of the NSW Drug Court on recidivism, the effect of petrol prices on petrol and number plate theft, the effect of liquor license restrictions on pub violence, the effect of tougher penalties on drink driving, the effect of arrest and imprisonment on crime, the effect of arrest on correctional workload, the use of residual analysis to identify over-prescription of pharmaceutical opioids, the effect of recidivism on prison population size and the effect of fine amount on recidivism among drink drivers. The presentation concludes with a brief summary of the main impediments to evidence-based policy. After the talk around 35 participants enjoyed the annual dinner together with the student presenters on the day, where acquaintances were formed or renewed, friendships were rekindled and stimulating conversation was held all round.

Richard Gerlach

QUEENSLAND BRANCH NEWS

Christmas Meeting

The November meeting of the Queensland Branch was a quiz night with Adrian Barnett as the quiz master. Four teams of six competed for the prize of cinema vouchers and kudos. The quiz tested a huge range of statistical skills, including identifying famous statisticians (see pictures, left), judging a Gaussian distribution by eye, and identifying whether a short piece of music was random or not. One of the trickiest questions concerned the rich life of Francis Galton and asked which one of the following is NOT true:

1. He created the first weather map published in The Times

2. He advocated that Chinese people should be encouraged to immigrate to Africa to displace the supposedly inferior locals

3. He was the first person to use the term "nature versus nurture"

4. He advocated that marriage between families of high rank be encouraged using monetary incentives

5. He devised a classification system for fingerprints that survives to this day

6. He died after boring a hole into his skull in order to increase the flow of oxygen to his brain

A question that should have had more correct answers was, "Which Australian state/territory had the highest divorce rate in 2008?", as the answer was Queensland. In true statistical style the last question was to estimate the winning score, which tested what teams thought of their own ability and their opponents.

To see the answers, please go to page 28.

Adrian Barnett

Bidirectional association between smoking and depression: Observational longitudinal data used to emulate a randomised clinical trial

The February meeting of the Queensland Branch welcomed Professor Liliana Orellana from the University of Buenos Aires. Liliana had visited Brisbane in 2010 and gave an excellent course for the society on causal models. This talk was related to causal models as it attempted to pick apart the difficult association between smoking and depression over time, and the direction of this association. If a smoker stopped smoking, would we see an improvement in their mental health? If a depressed patient became happy, would they be more likely to quit smoking? These questions would ideally be answered using a randomised controlled trial. In the absence of trial data, Liliana considered whether observational data could be made to emulate a randomised trial. This is achieved by using inverse probability of censoring weighting, where a subject is censored at the time they report the disease. The weights aim to redistribute the censored subject among subjects who are still disease free. The weights are calculated using the probability of censoring given the subjects' past histories. The analogy is to think about two people as similar as possible except for the outcome of interest. With two so similar people this outcome could have occurred in either one of them, but just happened to occur in one.

This is how the randomness is emulated. Using data for the Australian Longitudinal Study of Women's Health (www.alswh.org.au), Liliana showed how using all the data there appears to be an association between improved mental health and decreased smoking. However, after using the weights this association is close to zero with confidence intervals that straddle zero. A similar change occurred for the association between decreased smoking and improved mental health. There are some strong assumptions to the method, as it requires the censoring model to be correct, with no unmeasured confounders. It also requires consistency, meaning that the results from the observational data are the same as those that would have been observed if they had experienced an effective "cure" of their depression or smoking.

Adrian Barnett

HONG KONG
ASIA'S WORLD CITY

The 59th World Statistics Congress of the
International Statistical Institute

25-30 August 2013

The Hong Kong Convention and Exhibition Centre, Hong Kong, China

www.isi2013.hk

Further Information

For general information about the 59th World Statistics Congress, please visit the website *http://www.isi2013.hk*.

For more information about Hong Kong, please visit the website of the Hong Kong Tourism Board *http://www.discoverhongkong.com*.

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Hong Kong Special Administrative Region
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World Statistics Congress
HONG KONG 2013

SA BRANCH NEWS

A Tale of Two Parasites: Model-based Geostatistics and River Blindness in Equatorial Africa

Brian Cornish, Barbara Brentzell, Alan Branford (SA Branch President), Jackie Freeman

Peter Diggle

Pre-meeting mingle

The November meeting of the SA Branch was the E.A. Cornish Lecture. The speaker was Professor Peter Diggle of CHICAS, Health and Medicine, Lancaster University.

Professor Peter Diggle began this lecture with some general remarks on the role of statistics in scientific research, and described how his own approach to research has been greatly influenced by his time spent with the CSIRO, and in particular the culture engendered by Alf Cornish in his time there as first chief of the Division of Mathematical Statistics. This approach was then illustrated by demonstrating how to build a model for the timed fall of a free-falling ball. Subject knowledge (Newton's law and reaction time) helped build a suitable model which was consistent with the data, incorporated the underlying science and was as simple as possible.

The remainder of the lecture further demonstrated this approach in action in geographical settings using a combination of empirical and mechanistic approaches. Data from the AEGISS project that consisted of 3374 consecutive reports of non-specific gastro-intestinal illness was used to give a short example of empirical modeling. This employed a log-Gaussian Cox process, a doubly stochastic class of model that allows fairly complex spatial modeling of the underlying intensity function based on covariates and spatial correlation. Data from the Foot and Mouth outbreak of disease amongst cattle in the UK in 2001 was then used as an example of mechanistic modeling of geostatistical data. The model assumed a temporal-spatially varying intensity of cases which incorporated the classic epidemiological spread of disease by conditioning on the previous history of cases.

Peter then moved onto the main body of the talk that described how an application of model-based geostatistics assisted in the appropriate provision of vaccination for onchocerciasis (river blindness). The African Programme for Onchocerciasis Control is a multi-national programme which aims to control the spread of river blindness throughout the affected region of Africa, and involves the widespread distribution of a filaricide medication called ivermectin. Unfortunately, in areas co-endemic for river blindness and Loa loa (eye-worm), the programme has been interrupted by the occurrence of severe, occasionally fatal, reactions to ivermectin. This necessitated the mapping of eye-worm prevalence to identify areas with high probability (>40%) of high Loa loa prevalence and which were thereby potentially high-risk areas for serious adverse reactions to treatment with ivermectin.

An initial model was built that combined the information provided by spatially sparse prevalence surveys and spatially dense environmental covariates. Thus, the model incorporated what was called "ground-truth" survey data which comprised of blood sample tests for Loa loa, and environmental data obtained from satellite that comprised elevation and greenness of vegetation. Local deviations from this logistic regression model were used to estimate the smooth residual variation that incorporated an underlying latent spatial correlation. From this, a preliminary probabilistic exceedance map showed each area's probability for a Loa loa prevalence of greater than 20%.

The final step was to obtain a predictive distribution for high Loa loa prevalence using additional data on RAPLOA prevalence obtained via survey. Thus, new predictive distributions of logit-transformed Loa loa prevalence that also conditioned on the RAPLOA prevalence survey data were back-transformed to obtain new estimates of the parasitological prevalence. Areas with high-probability (>40%) of a Loa loa prevalence >20% were then avoided in the APOC ivermectin treatment program. Professor Diggle concluded the talk by restating the main themes of a model-based approach to geostatistics; that the assumptions of the model are made explicit, that optimal estimation is provided for, and that the approach allows us to make proper allowance for predictive uncertainty at each stage of estimation.

Barbara Brentzell (Cornish's daughter) has been a supporter of the lecture since its inception and was in attendance with her brother Brian Cornish and his wife. The large attendance (50) at the lecture was testament to the high regard Alf Cornish is held within the Adelaide statistical community.

Richard Woodman

Peter Diggle in action

Top: Workshop participants
Above: Richard thanking Peter Diggle

Peter Diggle Workshop: Model-based Geostatistics: with applications in the environmental and health sciences

Following the E.A. Cornish Lecture Peter Diggle presented a two-day workshop at Flinders University on the core theory and methods of model-based geostatistics. Theoretical ideas were motivated by, and applied to, case-studies in environmental science and epidemiology. Course delivery was a combination of lectures, software demonstrations and open-ended lab sessions where participants gained experience of the geoR and geoRglm libraries from the open-source R computing environment.

The workshop was attended by 32 participants coming from all States of Australia as well as New Zealand which highlighted the popularity of the topic. Not surprisingly the course content rating was very high and there were many complimentary comments about the presenter Peter Diggle. Overall this was an extremely successful workshop.

The Statistical Society would like to thanks Richard Woodman from the Flinders Centre for Epidemiology and Biostatistics (Flinders University) for hosting this workshop.

Paul Sutcliffe

WESTERN AUSTRALIA BRANCH NEWS

The November meeting of the WA branch was held at the University of Western Australia and the talk was given by Dr John Henstridge, a well-known member of the society and Managing Director of Data Analysis Australia.

John's talk was titled 'What is a Statistician?' and for those of us who call ourselves statisticians it was thought provoking. Many of the readily available definitions of a statistician are very narrow and do not cover the range of tasks a statistician can be called upon to assist with. A statistician is more than "a person who collects and tabulates statistics" (Shorter Oxford English Dictionary, 1995). He also noted that the Statistical Society of Australia currently does not define the term statistician.

John took the audience on a walk through history, highlighting how statistics has developed over time. While the original focus was on collecting, assembling and presenting data, Florence Nightingale added a key component to the process which is interpreting the data. It was her interpretations, and novel graphical displays, that helped make a difference in her field of nursing.

Moving forward through time John highlighted Ronald Fisher's contribution to statistics, in particular his mathematical approach and his significant contributions to experimental design and statistical inference.
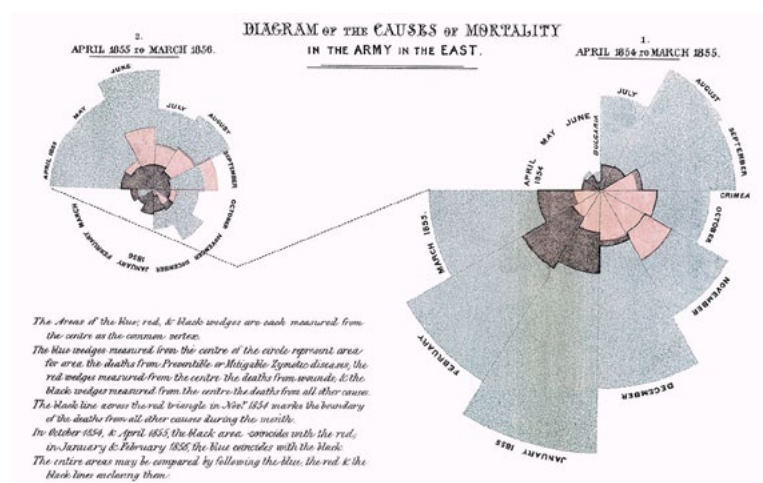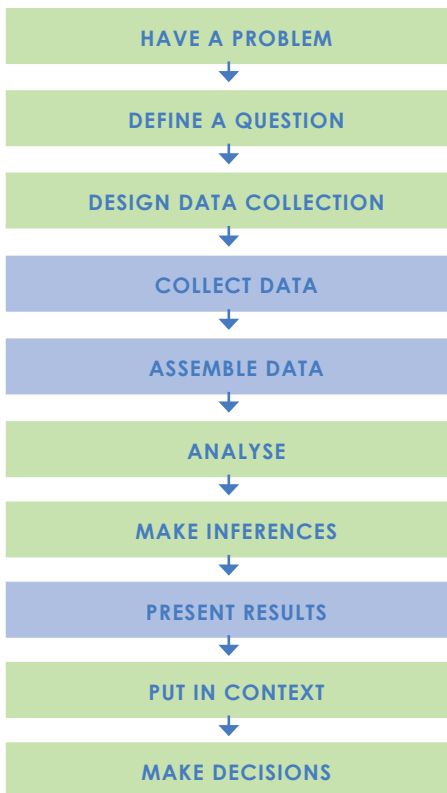
The next stop on the journey highlighted the role of computers in processing and presenting large amounts of data; tools that are indispensible by the modern statistician.

John concluded his talk noting that the role of a modern statistician is very broad. He noted that during his time as a consultant statistician he commonly encounters problems that are often not well defined, and therefore defining the key question is often the first stage in a project. Furthermore, he noted that the 'traditional' aspects of the statisticians' role remain useful in the modern world; statisticians are still called upon to design experiments, collate and assemble data, analyse data, and present the findings. And finally, some modern statisticians are called to go further, by putting the results in a wider context and assisting with the decision making process.

The origin of the word statistics comes from Statist which the Shorter Oxford English Dictionary defines as 'A person skilled in state affairs, a person with political knowledge, power or influence'. Perhaps the origin of the word best reflects the role of a Statistician in the modern world.

Alethea Rea and Prudence Thompson

Statistical consulting

- HAVE A PROBLEM
- DEFINE A QUESTION
- DESIGN DATA COLLECTION
- COLLECT DATA
- ASSEMBLE DATA
- ANALYSE
- MAKE INFERENCES
- PRESENT RESULTS
- PUT IN CONTEXT
- MAKE DECISIONS

Causes of Mortality (diagram by Florence Nightingale)