statistical society of australia incorporated

newsletter

30 November 1997   **number 81**

STATISTICAL SOCIETY OF NEW SOUTH WALES

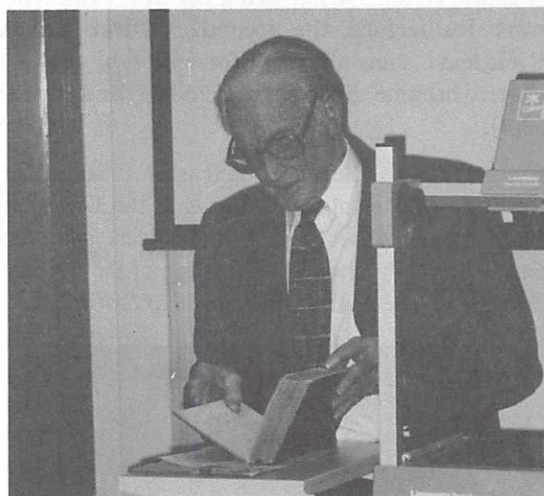### Reflections on Statistics 1947 to 1997 to ...

The New South Wales branch celebrated its fiftieth anniversary on Thursday 25 September at the University of Sydney. This can be seen not only as the anniversary of the birth of the NSW branch but also as the birth of the Statistical Society of Australia, for in 1962, the NSW Society together with the younger Canberra Society united to become the Statistical Society of Australia.

We met in the Norman Gregg lecture theatre in the Edward Ford Building, formerly the School of Public Health and Tropical Medicine, now the headquarters of the Faculty of Medicine and its new postgraduate degree program. For most of the first twenty-five years of the branch, this was where the monthly meetings were held. Not that those who attended many of those early meetings would have recognised the room. Gone is the traditional layout with hard benches ergonomically designed to keep one awake. Instead, we sat in comfortable padded seats arranged in a horseshoe (almost) with modern equipment, carpeted floor and air-conditioning that didn't work! This was unfortunate as the lecture theatre was packed, some sitting on chairs brought from nearby rooms.

In his welcome speech, the President, Professor David Griffiths, made special mention of two of the early office bearers of the Society who were present: Alf Pollard, President 1951-52, and Bob Rutledge, Vice President 1949, Treasurer 1950-54, President 1955-56, Secretary 1961-62. Altogether twenty of the 40 or so former office-bearers currently living in New South Wales attended. Among the apologies were those from past presidents David Duncan (1950), Oliver Lancaster (1953-4), Les Balaam (1968-9) and Charles MacGilchrist (1980-1).

The Founders

Emeritus Professor **Alf Pollard**, President 1951-2, who was present at the first meeting on 25 September 1947 and who worked on the committee which drew up the first constitution, began proceedings. Alf was involved in the formation of four learned societies: the Arts Association (1954), the Society of Security Analysts (1959), the Australian Mathematical Society (1960) and the New South Wales Statistical Society (1947). He said that there were two amazing aspects about the formation of the Statistical Society: first its timing and second, the quality of its program.

Alf Pollard talking on the early days.

The Society began when the academic discipline of statistics was in its infancy. At Universities there may have been the odd service course in statistics, but not courses in mathematical statistics. There were isolated researchers in various fields familiar with statistical techniques, but there were no textbooks on which a lecture program could be based. Kendall & Stuart Vol 1 and Wilks only became available in Australia in 1945. It was not surprising then that amongst the academics involved in founding the Society, there was considerable fear that the official statisticians would dominate the fledgling society.

In illustrating his second point viz the quality of the program, Professor Pollard spoke about the array of great statisticians who addressed the Society in its first decade. They included Kendall, Fisher, Mahalanobis, Campion, Finney, Keyfitz, Carr Saunders, Bradford Hill and on the computational side Comrie and Hartree. He paid tribute to Stewart Rutherford and his determination to form the society along the lines of the Royal Statistical Society.

This led to the establishment of a program of strong intellectual quality as reflected in the speakers from which we have all benefited over the life of the branch. Indeed, in Alf's words, "the Society has reason to be thankful to its founders, that it has a past to be proud of and . . . a fine future."

The founders were Oliver Lancaster, Helen Newton Turner and Stewart Rutherford in so far as they called the public meeting which led to the establishment of the Society. They also served as office bearers and councillors, Helen Turner being the first President and Stewart Rutherford the second. Oliver Lancaster went on leave soon after the formation of the Society but later became Secretary (1950-1) and President (1953-4).

Professor Eugene Seneta, **Lancaster**'s successor as Professor of Mathematical Statistics at the University of Sydney, brought greetings from Oliver and read a statement from him about the founding of the Society and the creation of *The Australian Journal of Statistics*.


Eugene Seneta brings greetings from Oliver Lancaster

Oliver was very involved in the forerunner of the *Journal*, *The Bulletin of the Statistical Society of New South Wales*, first published in March 1949, as well as being the first editor of the *Journal*, a position he held from 1959 for 13

years. Professor Seneta spoke of Lancaster's life, his academic career first in Medicine and then in Statistics.

Oliver Lancaster's research in medical and vital statistics led to a thesis on Mortality in Australia for which he was awarded a Doctorate of Medicine in 1966. His research in mathematical statistics led to a thesis entitled Topics in the Distribution of Chi-squared for which he was awarded a Doctorate of Science in 1971. He applied his great intellectual ability, careful, meticulous work and broad interests to developing *The Australian Journal of Statistics* into a journal of substance as well as to the formation and growth of the Statistical Society of New South Wales.

The first President of the Society was **Dr Helen Newton Turner**. One of her research officers during the sixties, Dr George Brown, outlined her career and achievements. Helen Turner graduated in Architecture from the University of Sydney in 1930, during the Great Depression. She was eventually employed as a Secretary at the McMaster Laboratories of the CSIRO under Clunies-Ross who granted her one year's study leave to work with Fisher in London and Yates at Rothamstead just before the outbreak of World War 2. After war service, she became the consulting statistician at the CSIRO Division of Animal Health and Production. During the early post-war years, she collaborated with Oliver Lancaster in a course of lectures for research workers and then joined with him and Stewart Rutherford in the formation of the Society.
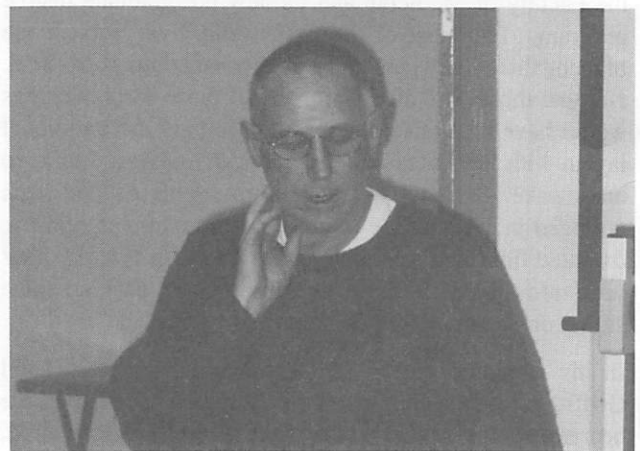
George Brown outlines the career and achievements of the first president, Dr Helen Newton Turner

In 1956, Helen Turner became head of the CSIRO Animal Breeding Unit. George became one of Helen Turner's "girls" who were responsible for data collection, entry and verification although his tasks were wider including analysis which was directed to calculating population characteristics (heritabilities, selection differentials and genotype by environment interactions) and lugging boxes of punch cards from one computer installation to another usually interstate. HNT demanded and obtained careful meticulous work. To her assistants, she was "an imposing no-nonsense figure who commanded respect and loyalty (to which) she reciprocated with kindness and encouragement." For her work, she received many awards

including the Ceres medal and was made an Officer of the Order of Australia.

Professor Stewart Rutherford came from Oxford to a senior lectureship in the Faculty of Economics at the University of Sydney at the beginning of 1947. He became the Foundation Professor of Economic Statistics in 1962. He was an ardent member of the Royal Statistical Society and on his arrival in Sydney, sought to establish either a branch of the RSS or a society run on similar lines. One of his students, Associate Professor Eric Sowey, spoke warmly of the influence Rutherford had on his life. He depicted Rutherford as a reserved, very considerate man of great energy, who took great care that his departmental offerings were diverse and up-to-date. Eric remembers Stewart Rutherford with much affection not only for introducing him to econometrics, his professional field, but also for having had a part in his meeting his wife Anne, a student in Oliver Lancaster's department. These two events Eric celebrated by giving his audience an outline of the plot of a new *opera La Forza del Destino Statistico* with many thanks to Verdi. Members present enjoyed Eric's account of the opera because Eric promised not to sing the arias.

Eric Sowey speaking on Professor Stewart Rutherford

Growth and development

Dr Ann Eyland for once had little to say. Instead she was the only speaker who gave everyone a handout, some extracts of which are in the accompanying table. Ann drew attention to the following highlights in the fifty years of the Society.

- In March 1949, the Society published the first issue of the Bulletin. This became the *Journal of the Statistical Society of Australia*.

- In 1952, the Society established two prizes at the University of Sydney: one in the faculty of Science, the other in the faculty of Economics. Now, the branch awards prizes at most NSW universities.

- In 1958, the Society conducted a symposium on 'Uses of Official Statistics". Symposia were run annually from then until the mid eighties.

- In 1962, the NSW Society joined with the Canberra Society to begat its current parent, the Statistical Society of Australia. It has spawned two other

organisations: the Market Research Society and the Operations Research Society.

- In 1991, the branch awarded scholarships for students undertaking an honours year.

In spite of a noble start, there have been only three women Presidents of the branch.

Ann Eyland highlighting some of the achievements over fifty years

	Number of Members	Accumulated Funds
1948	41	£10
1953	73	£137
1958	180	£600
1963	306	not available
1968	370	$3,271
1973	381	$3,070
1978	265	$5,033
1983	356	$11,023
1988	273	$20,347
1993	304	$21,373

The Future

Very appropriately, this was the most hi-tec presentation of the evening. Dr Ron Sandland, head of the CSIRO Division of Mathematics & Information Sciences, a former President of the NSW branch and of the SSA, finds the future of Statistics uncertain, the evidence being closure and mergers of departments, falling student numbers, difficulty in recruitment, economic rationalism, competition from other disciplines and the rise of the electronic statistician. He outlined the challenges facing the profession from Information Technology, from Science and Industry, and from the social context and suggested that some of our paradigms have reached their use-by-date. In this context, he discussed the Shewhart paradigm and the shift from Quality Assurance to Continuous Improvement. To meet these challenges, statisticians need to market themselves more effectively and to address urgently the issue of recruitment, education and training for the profession. As with the founders of the Society, Ron strongly emphasised the need to embrace the broader view of statistics, which John Chambers calls "Greater Statistics".

There was support for Ron's view in the data presented about membership of the branch. We may well ask whether the next fifty years will see the continuation of the SSA and the NSW branch with a vibrant program of regular meetings. Will our successors look back on this period in the Society's history and admire the high ambition of our generation as we do of the founders?

Dinner

We adjourned to the University Club to meet the Vice Chancellor of the University of Sydney, Professor Gavin Brown, a mathematician, and to enjoy a celebratory drink and satisfying dinner.

Professor Des Nicholls, President of the SSA, on instruction from AE and DG brought greetings from the Society. After dinner, Professor Brown entertained us with an old probability problem from Paccioli. A and B are engaged in a series of fair games with the winner being the first to reach 6. Play is abandoned with A leading 5:3. How should the prize be divided?

A final toast and the evening ended.

Ann Eyland

In earnest conversation, Professors Alf Pollard, Gavin Brown, David Griffiths and John Pollard

Opposite engaged in their own discussions are Neville Weber, Eric Sowey, Ron Sandland and Des Nicholls

NEWS ABOUT MEMBERS

Congratulations to **Geoff McLachlan** (University of Queensland) who, at the recent Joint Statistical Meetings in Anaheim, was presented with the 1997 Wiley Interscience award for outstanding achievement in scholarly publishing for his joint book with Professor Krishnan of the Indian Statistical Institute, titled "The EM Algorithm and Extensions". ' This is the first year of the award.

Two long standing members of the South Australian Branch, **Graham Constantine** and **Marg Correll**, have recently retired after several years of distinguished service at CSIRO and the University of South Australia, respectively.

Both have contributed much to the Branch over the years, Graham most recently as Assistant Secretary and Marg as Auditor. We wish them well for the future and look forward to their continued participation in the Society.

Queensland Branch members **Sama Low Choy** and **Tony Pettitt**, with their poster on "Hierarchical Bayesian Models of Underlying Spatial Dependence for Binary Lattice Data with Missing Observations". It was judged best poster at the Royal Statistical Society Conference on Applied Bayesian Statistics IV at Nottingham, UK in July.

BRANCH REPORTS

Queensland

All together now

At the July meeting of the Queensland Branch, Dr Kerrie Mengersen (Queensland University of Technology, Brisbane) spoke on "Meta-analysis: models, malpractice, mergers and miscellany". Kerrie outlined the broad aims of meta-analysis, namely to pool results, to create an overview and to synthesise ideas from various sources in a quantitative fashion. A striking piece of data under-lined the importance of the technique: in 1940 there were 2,300 medical journals, and that number had exploded to 23,000 by 1990. An obvious problem is how one might obtain an overall result from so many sources without losing the detail contained in each (for example, in a relative risk assessment of lung cancer, incorporating prior beliefs with detailed knowledge of types of cancer and patient histories). Of course, the pros of meta-analysis include the potential to gather more evidence and enhanced ability to identify outliers, although the con is the perennial questions over whether one is really combining like with like. Kerrie outlined some analytical techniques for cohort studies, employing a Binomial model within the Bayesian paradigm which facilitated hierarchical structures to model existence of super-populations for the cohorts at various levels.

She also illustrated fixed effect and random effect models for combining information. Amongst the concerns Kerrie expressed over methods for meta-analysis were the ability to account for the total variance in the data, particularly using random effect models; bias, including publication bias, especially the tendency for journals not to publish 'bad news'; the danger of over-interpreting a meta-analysis result; limitations of meta-analysis being completely parametric; and unavailability of causality inferences. This was a rare occasion where the Branch heard a statistics talk about *everything*!

Safety in numbers

At its October meeting, the Queensland Branch was treated to a talk by an out-of-town speaker, Professor David Vere-Jones (Victoria University of Wellington, New Zealand). David has an international reputation for his work in time series and stochastic processes, particularly applied to modelling earthquakes, as well as for his contributions to the International Conference on Teaching Statistics (ICOTS). However, David spoke on a topic which was a little removed from both of these, namely "Links between official statistics and universities". He was, of course, well qualified to address such a topic, given his involvement with the International Statistical Institute (ISI), whose mission has long included training statistical staff for official posts. David began by identifying features of the present situation: that a substantial gap between academic and official statisticians

has *grown* over the last 50 years; that both sides are facing increasing difficulties; and that new types of links have begun to emerge (such as ICOTS, an Office for Official Statistics at Southampton University, UK, the US Bureau of Census collaborative research programme, and the Swiss Federal Statistics Office joint venture with the University of Neuchâtel).

David Vere-Jones with Helen MacGillivray; Hans Mulder in the background.

David set the present situation as the nett effect of almost 400 years of statistical history, ranging from Graunt's and Petty's work on official statistics in the 1600's, they being contemporaries of Pascal, Fermat and Bernoulli, through to increasing government involvement in statistics in the 1700's and the foundation of statistical societies in the 1800's, Laplace's and Gauss's early work on distribution theory leading to Galton's and Pearson's development of statistical inference, culminating with an explosion in University education stemming from seminal work by Fisher, Mahalanobis, Borel and Kolmogorov. However, modern issues of the 1990's, such as public interest in the environment, reduced opportunities for scientific careers, falling enrolments in science and stringencies imposed on University departments, have together necessitated more demands on government statistical offices and the need for more sophisticated methods and preservation of integrity and high standards in the face of political and commercial concerns. David even mused on an extension of the computer-induced redundancy of human workers: the statistical package-induced redundancy of statisticians!

Jan Priest, Ruth Hubbard, Ian Andrew, Kaye Basford and Kim-Anh Do, at tea before the October meeting of the Queensland Branch.

David went on to describe a proposed joint venture between his University and the government statistics agency in his country, Statistics New Zealand (StatsNZ). The plan is that StatsNZ will provide up to three staff at the lecturer or senior lecturer level with the University providing accommodation, computing resources, library materials, and so on. The office would be linked to the University's Institute of Statistics and Operations Research. The perceived benefits of the co-operation include increase in student interest in new statistics programmes; new sources of research and consulting with an enlarged pool of expertise; greater visibility of StatsNZ; support for training new graduates and updating skills of existing staff. The venture certainly seemed a courageous one in such a difficult and challenging time, particularly where the role of statistics groups in their own right was not guaranteed. Several members of the branch joined David at dinner afterwards at a Southbank restaurant where, despite several menu items being New Zealand fare, David was able to sample some of the local cuisine.

Rodney Wolff

South Australia

Obituary

We note with sadness the passing of Rod Kenyon who was a long time member of the Statistical Society of Australia. Rod worked for the past 24 years for the South Australian Research Development Institute (formerly the South Australian Department of Agriculture) as a Senior Biostatistician and Manager of the Biostatistics Unit, after graduation from the University of Adelaide, Department of Statistics. Rod was aged 46 and is survived by his wife Leanne and three children Adrian, Sarah and Amanda. The South Australian Branch wishes to extend its deepest sympathy to his family and friends.

Professional Development Workshop

The South Australian Branch held a Professional Development Workshop for three mornings during July 7-9 at the University of Adelaide's Waite Institute. Dr Richard Morton of CSIRO Mathematical & Information Sciences, Canberra kindly offered to conduct a workshop on the "Presentation of the Book - Generalised Linear Models (2nd edn, 1989) by P. McCullagh & J.A. Nelder". The purpose of the Professional Development Workshop was to provide the 23 participants with the opportunity to update their statistical skills and for many a great way to FINALLY find the time to work through the content of the book. While the majority of participants were from universities or research organisations, there were a number from government departments and private industry.

Richard Morton addressing the SA Branch.

Lifetime data analysis in the Presence of Censoring Errors

During his talk on this topic Michael Phillips, University of Leicester, referred to Phillips and Sweeting (1996) who considered estimation of the parameter of the negative exponential distribution with censored data when there is incomplete knowledge of the censoring times. It was shown that, under particular models for the censoring mechanism and censoring errors, it will often be safe to ignore such errors provided they are not expected to be too large. That discussion was broadened to include more general censoring mechanisms and failure time distributions such as the Weibull distribution. In the case of an exponential lifetime distribution, when censoring errors are anticipated a variance correction which could be applied to the usual parameter estimator was investigated.

Biographical:. Dr Michael J. Phillips is Lecturer in the Mathematics and Computer Science Department at the University of Leicester, Leicester, UK, where he teaches undergraduate and postgraduate statistics courses. He is the author of a book and research papers in the applications of probability and statistics to problems in engineering, particularly in the area of reliability. He is active in the affairs of the Royal Statistical Society.

Statisticians using Excel

Mary Barnes of CSIRO Mathematical & Information Science organised a workshop about statisticians using Excel, where some of the tips, tricks and limitations of Excel were presented and what Excel can and can't do was covered, as well as some practical spread-sheets being illustrated. The meeting was not aimed at covering Excel code in detail, but all the workbooks and information were made available on the Web for future reference.

The program was as follows:

John Field (CSIRO)   Meeting facilitator.

Mary Barnes (CSIRO)   Overview from statistical perspective. Good features, errors and other features desirable to have. Handy keystrokes and how to find them in help. The Statistical Analysis Toolpak.

Bronwyn Harch (CSIRO)   How to set up data for each of the statistical functions in the Statistical Analysis Toolpak.

Lynne Giles (Flinders University)   Graphs in Excel. Problems with two charts in the Statistical Analysis Toolpak.

Barbara Trudinger (CSIRO)   Solver   for optimization - a practical example.

Margaret Meyler (University of Adelaide) Teaching with Excel - letting them find problems with the data.

Mary Barnes (CSIRO)   An   example spreadsheet to illustrate the effect of sample size on the estimation of a standard deviation. Preview of an add-on used for teaching and performing ANOVA, *t*-tests and regressions, and for calculating pdfs.

Surprise: an information-based diagnostic

David M. Smith of Lancaster University presented a new way of using an old concept - information - as a diagnostic measure. "Surprise" is a measure of the unusualness of an observation in a data set. As well as the obvious use of detecting outliers, surprise proves particularly useful in multivariate data, where decompositions of surprise can reveal interesting features of the data. The use of surprise with a number of data sets was demonstrated.

Biographical:. Undergraduate degree (BSc) at Adelaide in Statistics and Computer Science completed 1990. Honours degree in Statistics completed at Adelaide 1991. Then an RA at Adelaide with Ari Verbyla before spending a year backpacking around Europe. During this time Ari introduced me to Peter Diggle at Lancaster University who eventually offered me a job after getting sick of me turning up asking for programming work to pay my way around Europe. Since 1994 I've been working as an RA at Lancaster University working on longitudinal data and the software package Oswald, and am in the process of completing my PhD ("Topics in Longitudinal Data Analysis").

Gary Glonek

Canberra

Jobs for the Boys and Girls?

Dr Ron Sandland of CSIRO Mathematical and Information Sciences (CMIS) addressed the Branch in September. His first assertion was that the future of Statistics is uncertain, with evidence coming from falling student numbers and the merger and closure of university Statistics departments around the world. But he was able to balance this against a large number of instances in Australia where statistics is providing important input, either through the work of CMIS or through the Australian Statistics Advisory Council (Ron is the Society's representative on that Council).

Ron had recently returned from the ISI meeting in Istanbul and he described his impressions of a group of papers that had been presented by special invitation of the President of ISI. His main memories of them were that they not only addressed questions of great public importance, but that their slides contained elegant graphs rather than formulae.

To finish with, Ron gave a list of key issues for Statistics, including the availability of large complex data sets, the growth of multi-disciplinary teams and the emergence of Greater Statistics. "Greater Statistics" is a term coined by John Chambers, and is defined as the entire process of data preparation, analysis and presentation.

Ron also provided a list of requirements to deal with these key issues, including a commitment to Greater Statistics and an understanding of how non-statisticians relate to data, uncertainty and decision-making.

On that broad note, Branch members headed to the Lemon Grass Thai restaurant to tackle such issues further ... and to enjoy a banquet.

"Flying Solo" at NATA - The Life and Times of One Young Statistician

In early October the Branch heard Ms Susan Hoffmann, Company Statistician at the National Association of Testing Authorities (NATA).

NATA is part of a network of associations which maintain standards in Australia, and takes responsibility for accrediting the labs which test everything from food and soil samples to electrical equipment and measuring devices. NATA also provides certification to ISO9000 standard, proficiency testing and other related services.

Susan spoke about her role at NATA, which has included revamping the statistical presentation of NATA reports after consultation with the users of the reports. Robust statistical summaries have been introduced, along with transparent outlier detection tests and improved graphical presentation. Susan also described the experimental design used by NATA to test laboratories, which relies heavily on paired samples leading to measures of both within-laboratory and between-laboratory variation.

Professional isolation is a real issue, which Susan highlighted with a slide with the single word "me" in the middle of it. She did add to it quickly however, including the Statistical Society and its Young Statisticians group a part of her network of contacts.

Susan wrapped up by describing future directions for NATA which she hopes to be involved with, and describing her positive reaction to some of the recent initiatives of the Statistical Society including accreditation, the code of conduct and the merging the Australian and New Zealand journals.

After Susan's talk, Branch members continued their census of local restaurants by squeezing into Viva Zapata, one of Canberra's newest and smallest.

Alice Richardson

MEDICAL STATISTICS

ASC14 and Norman Breslow

At the conference next year, given the presence of Norman Breslow, we are considering holding a 2-day workshop on "Statistical Methods in Epidemiology and Clinical Research" similar to that which was held at Monash in 1994 with David Clayton. The format would involve our featured guest giving a number of more or less didactic sessions plus participants giving related presentations, including work-in-progress and actual data analysis, with the aim of generating discussion around practical issues.

Norm Breslow has indicated that his principal interests at the moment are:

(i) logistic regression analysis of data from two-phase case-control and other complex stratified sampling designs,

(ii) case-control studies with "internal" or "artificial" controls, examples being the haplotype relative risk methods for genetic epidemiology, the case-specular design for EMF studies and the case-crossover and case-time-control designs for intermittent exposures, and,

(iii) generalized linear mixed (hierarchical) models.

There has been little progress on making more specific plans as yet, partly because of the lack of response to the request for suggestions in the May newsletter! So I hope this will generate some responses and ideas!!

Training of biostatisticians

With Lynette Lim and Dick Heller from the University of Newcastle, I have been involved in preparing a document exploring ways in which the training of biostatisticians in Australia might be enhanced. Statistics is now an essential part of high quality medical research, and vital to public health research. But the need for biostatistical expertise is a difficult one to satisfy, since suitable individuals need to have a combination of mathematical/ statistical skills and, very importantly, the ability and interest to collaborate effectively with health researchers. With some exceptions, there is a deficiency of high quality, well trained medical statisticians in Australia. Only a very small number of mathematically able graduates are going into statistics and medical statistics in particular, possibly due to lack of awareness of the career opportunities and challenges offered in the field. To redress this, our first suggestion is to try and make biostatistics more visible as an attractive career path by finding a way to fund Honours scholarships that would be tied to a period of practical experience in a medical or public health research environment. At the moment we are exploring avenues for funding such a system. In the longer term, the infrastructure for higher-level training needs examination, if we could start attracting more suitable candidates.

Any suggestions on this topic would be welcome.

John Carlin

INDUSTRIAL STATISTICS

ACIS97 - Second Australian Conference on Industrial Statistics

This conference was run by the Industrial Statistics Section in Melbourne on Monday 29 September and Tuesday 30 September.

The first major theme of the conference was communication. Many of the papers dealt with some aspect of communication: communication between statisticians and process owners who might employ statisticians, communication as a preliminary to the technical part of statistical consulting, communication which needs to follow the technical part of statistical consulting, conducting of training courses and selling the importance of statistical thinking. Two sessions of the conference required audience participation. These sessions were presented by Allan Adolphson and Joe Tasconi and by Peter Martin and Rod Howes. A motivation for having such sessions was the Mathematics in Industry Study Group meetings in which problems are posed and some progress is made in solving those problems over the course of a week-long conference.

The second major theme of the conference was continuing education. Peter Smith was invited to talk about the analysis of failure and survival data. This topic was

chosen by asking people who might attend the conference what topics would interest them.

Below are some of my notes from the talks given at the conference. I hope that they will give some indication of the flavour and content of the conference.

Alan Long argued that we statisticians often do a technically very good job, but only on a part of the decision-making system. We often ignore the people part of the decision-making system.

Harry Gielewski (left) and Alan Long

He gave an example of using linear programming to find the mathematically "optimum" way of making fertilisers at a set of plants. This mathematical optimum was virtually ignored by a human decision maker who had access to non-quantitative data and used a broader inference system than seems to be familiar to statisticians.

He also spoke about ways in which we don't explain ourselves well.

His talk prompted a lot of comments, suggestions and questions. In particular, Harry Gielewski noted that we are typecast. People expect statisticians to present a report and then to go away.

Ian Saunders discussed a project with John Field in which they collected data on the way organisations use data. They concentrated on organisations which have won Australian Quality Awards.

Ian presented a model suggesting that there are three levels of decision which need three types of data

1. Strategic decisions need data on success measures.
2. Management or tactical decisions need data on Key Performance Indicators.
3. Operational decisions need data on operational measures.

Harry Gielewski challenged us with the question "How long do the results that you provide to clients actually survive?" and suggested that the tendency of statisticians to focus on our models is a major problem. He suggested that we need to take a broader view of what we call "data" and to think carefully about all of the processes which might have affected this data. Our job is most constructively regarded as being to receive, manage and digest data, not to fit models to data which has somehow or other arrived on our doorstep.

Nam-Ky Nguyen discussed how experimental designs can be tailored to experimental requirements of particular situations, rather than adjusting the experimental requirements to make use of readily-available experimental designs.

Donal Krouse argued that the part of experimentation where statisticians can be of most use is "Predesign" - the early stages of planning and interactions with the end users. He also mentioned that factorial designs have become fashionable under the acronym "MVT", standing for "MultiVariate Testing".

Allan Adolphson and **Joe Tascone** discussed a problem faced by Australian Newsprint Mills. Does data on paper breakage rates from the Herald-Sun pressroom indicate a "Winter Effect"? If so, how should breakages be classified and monitored? Should Australian Newsprint Mills make stronger paper (at greater cost) or is the effect due to handling of the paper in the pressroom?

During this talk, there was a break for discussions amongst the participants at each table.

John **Henstridge** discussed his experience of commercial statistical consulting. Rather than making decisions for engineers, he likes to provide them with probability distributions so that they can decide on the level of reliability that they want.

His three principles for a viable statistical consultancy were given as:

1. Have a client base which can deliver return business.
2. Identify situations where mathematics and statistics can help. This requires knowing your clients' business and having broad expertise.
3. Try not to say "No", but to provide a complete service.

Richard Jarrett spoke about his continuing attempts to train statisticians at what industry wants and needs. He presented a model with four parts.

1. A real-world problem
2. A mathematical problem
3. A mathematical solution
4. A real-world solution

He regards taking the step from real-world problems to mathematical problems as the really tricky bit. It is a skill that someone who we call an "accredited statistician" ought to have, but it is not taught by those university courses which consist of bits of theory illustrated by examples.

At the University of Adelaide, groups including both engineering and statistics students do projects looking at how data is used in companies.

Greg Peterson talked about a "control and capability workshop" used to teach Alcoa employees about statistical thinking and a generic approach to improving processes. The audience were captivated by his display of training aids.
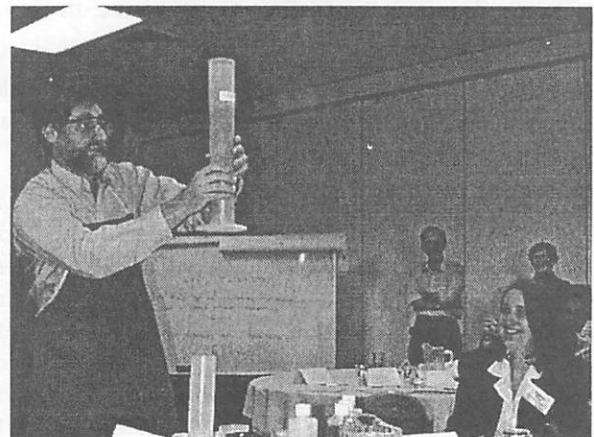
Greg Peterson (with safety glasses) demonstrating a training course activity in which the height of froth after mixing chemicals is to be optimized.

His definition of "statistical thinking" included

- seeing structure in randomness,
- seeing structure in variation: a deterministic and a random component,
- knowing the consequences and importance of variability,

- knowing appropriate actions in response to variation,
- being able to identify causes of variation, and
- knowing how to avoid pitfalls due to causes of variability.

Peter Smith presented a two-hour session of the analysis of failure and survival data, starting at 8.30 on the Tuesday morning. He started with elementary ideas and provided extensive printed notes to assist with subsequent learning on those topics.

In discussion, Ruth Callcott said that the Weibull distribution is referred to as the Rosin-Rammler distribution when describing particle size distributions. She mentioned an analogy between mixtures of particle size distributions from coal from two sources and mixtures of survival time distributions for males and females in a medical application.

Peter Martin and **Rod Howes** talked about the six-sigma approach to training and data-driven decision-making. Peter talked about training from an adult-learning perspective, using the four steps

Plan, Train, Apply, Review

Rod talked generally about six sigma and a four-step approach to process improvement projects.

1. Measure to characterise the present situation, including process mapping and gauge repeatability and reproducibility studies.

2. Analyse data to characterise the present situation

3. Make improvements

4. Ensure that improvements are sustained

Michael King suggested that "Statistical Thinking" is about the questions that get asked and is quite different from "Statistical Methods" which is about ways of answering those questions. Statistical training tends to focus on statistical methods.

His formal definition of Statistical Thinking was "a philosophy of learning and action based on the following principles.

- All work occurs in a system of interconnected processes.
- Variation exists in all processes.
- Understanding and reducing variation are keys to success."

He challenged statisticians collectively with the question

"If statisticians don't help managers, who will?"
and challenged them individually with the question

"What will you do differently?

Ron Sandland (left) and Michael King

Ron Sandland also posed some challenging questions:

- Where do we, as statisticians, position ourselves? A manager is unlikely to say to herself 'What I need now is some highly complex statistical analysis'. In contrast, to illustrate a product which has been positioned in its market with great success, that same manager is more likely to say 'I need a break .... I need a KitKat.'

- Where can statisticians add value .... particularly in the light of electronic alternatives? We need a new paradigm for Industrial Statistics. We need to think very hard about our position. We need to change what we do.

As at the previous Australian Conference on Industrial Statistics held in December 1995, posters were displayed and discussed with their authors during a pre-dinner drinks session prior to the Conference Dinner. There were seven posters. Two poster presenters commented to me afterwards that other people attending the conference had made very constructive suggestions.

I didn't spend much time looking at the posters. Rod Howes, Alan Long, Greg Peterson and I had all brought along training aids and demonstrations that can be used for teaching statistical ideas. I found this exchange interesting, but Greg Peterson's display of training aids as part of his talk was probably a more effective way of showing how training aids can be used.

Geoff Robinson

SURVEY AND METHODS SECTION

The Jerusalem Satellite Meeting on Longitudinal Studies

The Australian Bureau of Statistics was one of the organisations which co-sponsored the Jerusalem Satellite Meeting on Longitudinal Studies. The conference was held from 27 to 31 August, following the ISI session in Istanbul.

The meeting, which attracted 130 delegates from 27 countries, was conducted under the sponsorship of two sections of the International Statistical Institute: the International Association of Survey Statisticians and the International Association of Official Statistics.

The program aimed at balancing between the theoretical and practical aspects of longitudinal studies. There was a good mix of attendees with academic backgrounds and survey statisticians from research organisations and government statistical agencies. The first two days of the seminar was devoted mainly to methodology issues, whilst the last day of the meeting was devoted to presentation of case studies in different fields of application.

For the statisticians collecting or analysing data from longitudinal surveys, the inaccuracy of estimates due to missing data and measurement errors is a major concern. To tackle this problem, several authors have suggested to model these errors explicitly and to include the model for these components of survey errors together with the model for the change variables of interest, in the analysis. Survey statisticians, on the other hand, focused on the approach to dealing with non-response through weighting and imputation.

Dr David Binder of Statistics Canada gave the keynote address at the first session. He summarised the challenges faced by survey methodologists and official statisticians when conducting longitudinal surveys. The meeting was concluded by a panel discussion on the topic "where do we go from here?". Two members of this society, Ray Chambers and Frank Yu, were represented on the panel.

Although there was not a published proceedings for the meeting, the editor of *Survey Methodology* has agreed to dedicate a volume of the journal to some of the papers presented. Authors of the papers were encouraged to submit their work to the usual refereeing process.

A forthcoming conference which will also focus on longitudinal data analysis will be the 1998 Symposium on Longitudinal Analysis for Complex Surveys, to be organised by Statistics Canada in May 19 - 22, 1998. The focus of the meeting will be on the theory and application of longitudinal methods for data from complex surveys. Key speakers will include David Binder, Wayne Fuller, Harvey Goldstein, Lisa Lavange, Jerry Lawless, Danny Pfeffermann, and J.N.K. Rao. For details, write to the following email address: symposium98@statcan.ca .

Frank Yu
email: frank.yu@abs.gov.au

The Editors of the Newsletter wish to apologise for an error with the caption beneath the picture on page 7 of the August issue of the Newsletter. The caption identified the person in the centre of the picture as Charles McGilchrist; the person should have been identified as Roger Layton.

YOUNG STATISTICIANS

Workshop for Australia's Young Statisticians, 1 - 3 October 1997

It was a beautiful sunny afternoon on Wednesday 1 October, when 51 Young Statisticians and six invited speakers gathered at the University of Melbourne for the seventh Workshop for Australia's Young Statisticians (WAYS'97). Most participants were from New South Wales, Canberra and Victoria, with four Young Statisticians from Western Australia, one from Queensland and two from New Zealand.

Although the good weather didn't last, it by no means dampened the enthusiasm of the participants and during the next two days 26 Young Statisticians presented 20-30 minute talks on a wide range of topics, from the use of hypothesis testing to identify problems in data coding, to "How I became involved in statistics: from a young statistician".

The invited speakers were: Virginia Wheway, BHP; Nick Fisher, CSIRO; Susan Hoffmann, NATA Australia; Alan Welsh, ANU; Kim-Anh Do, QIMR; and Graeme Adams, NRMA, who all gave excellent and inspiring presentations. The workshop was made possible by sponsorship from CSIRO, NRMA, CMA, BHP and Statsoft Pty Ltd.

There were prizes awarded to the best and runner-up talks in two categories - each decided by popular vote. Prizes were a copy of Statistica for Windows from Statsoft for the best overall talk, a copy of "How to lie with Statistics" and $100 for the runner-up, and copies of "How to lie with Statistics" and $50 for the best and runner-up first-time talks. Prize winners were - best overall talk: Andrew Collins of BHP, runner-up: Ky Mathews of the University of Sydney, best first-time talk: Frances Krsinich of Statistics NZ, and runners-up: Annette Scott of ABS & Kayte Ashton of NCS Aust'asia

Some not-so-serious prizes were also awarded, including "Most Patronising" to Ky Mathews (for those who aren't in the know), the "Initials Award" to Mark T. Jones, the "Shortest Speech" award to Andrew Collins for his 10 minute talk (after which he answered questions for 15 minutes), and the "Best Recruitment Drive" award to Kim-Anh Do, who thinks we should all apply for scholarships to attend Stanford.

Several sessions were spent on strategic planning for the YS section, with participants breaking into groups to discuss the issues of contact, communication, links with academia, developing networks, accreditation and other related issues of interest to young statisticians. Output and ideas from these sessions are to be collated and disseminated through the YS mailing list and the State Representatives.

Dinner was held at the Rydges Carlton on the first night and at Cafe Italia on Thursday night, with the free time on Thursday being used by some to soak up Melbourne's cosmopolitan atmosphere in one of the many coffee shops, while others needed the time to recover from the full day's activities (making no mention of the night before). The dinners gave participants opportunities to do some informal networking with other Young Statis-ticians and the invited speakers, and the food was terrific.
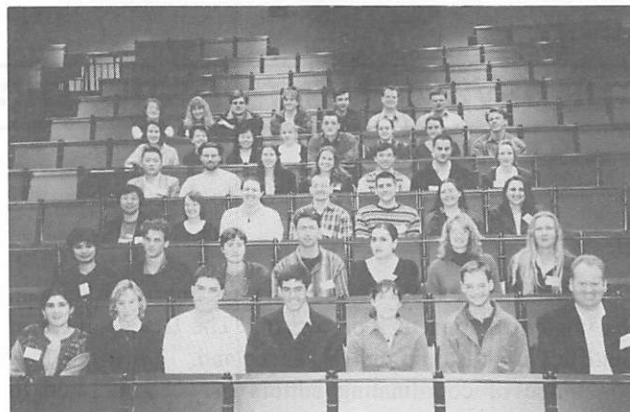
The workshop was a great success, thanks to the organiser Michael Kunkler and all who attended. The next WAYS is planned for August 1998 in Canberra.

Anna Poskitt

Contact details for Young Statisticians Section

At the workshop in Melbourne a new YS section chair was appointed - Virginia Wheway from BHP Research. A big thank you goes to Phil Dransfield, who held the position for one year.

The YS activities, for instance dinners, will be continuing throughout the year, so for more details please contact the nearest state representative:

Section Chair   Virginia Wheway - BHP
Phone: (02) 4252 3456
E-mail:
Wheway.Virginia.VL@bhp.com.au
and virg@cse.unsw.edu.au

ACT Rep   Anna Poskitt, ABS
Phone: (02) 6252 7954
E-mail: anna.poskitt@abs.gov.au

NSW Rep   Ky Mathews, University of Sydney
Phone: (02) 9351 2535
E-mail: mathewsk@agric.usyd.edu.au

QLD Rep   Melanie Fleming, QUT
Fax: (07) 3876 2099
E-mail: m.fleming@qut.edu.au

Victorian Rep   Michael Kunkler, Insureware
Phone: (03) 9533 6333
E-mail:
MichaelKunkler@insureware.com

WA Rep   Wes Soet, Curtin Uni of Technology
Phone: (08) 9266 3493
E-mail: soetw@cs.curtin.edu.au

As yet we have been unable to identify a YS representative for South Australia - if anyone is interested in filling this role please contact Virginia Wheway.

People interested in YS activities can also join our e-mail list, by sending a message to:

listproc@maths.anu.edu.au

with no subject and the one-line message:

subscribe youngstats <your name>

OR visit the new YS section web-site:

www.insureware.com/ys/

Susan Hoffmann

THE DEVELOPMENT OF STATISTICS IN AUSTRALIA AND NEW ZEALAND

October 1997

Dear Colleague,

The Statistical Society of Australia has entrusted me with the implementation of a project on "The Development of Statistics in Australia and New Zealand, 1788-1988". A committee of coordinating editors has been formed to bring together the large amount of material likely to be made available on the subject; they hope to organize it to produce a balanced book on the subject. Its members (in alphabetical order) are:

John Field, Joe Gani, Chris Heyde, David Leaver, Ray Lindsay, Terry Speed, David Vere-Jones, Neville Weber, Evan Williams.

The committee believes that there are many members of the statistical community who have valuable information on one or more individuals who played an important role in the development of statistics, or on some epipodes in this development. May I encourage anyone who has a

story to tell to get in touch with me, and send me a few lines, a few pages or as many as 20 pages to describe the individuals or episodes they have in mind? My email address is

gani@maths.anu.edu.au

and my postal address is

School of Mathematical Sciences
Australian National University
Canberra ACT 0200.

While the final book may not include all the material offered, your contribution will form a valuable archival resource for any future historians of statistics in Australia and New Zealand.

Thank you for your help in this project.

Yours sincerely,

Joe Gani

CENTENARY YEAR

1997 is the Centenary year of two distinguished Australian Statisticians: Maurice H. Belz (1 February 1897 to 28 March 1975) and Edwin J.G. Pitman (29 October 1897 to 21 July 1993).

Although remarkably different in personality, interests and fields of influence, they maintained a friendly relationship during their careers.

Maurice Belz was foundation Professor of Statistics at the University of Melbourne from 1955 to 1963. He actively promoted the application of Statistics in industry and government areas. He is remembered through the Belz Prizes, awarded annually to students of Statistics at the University of Melbourne; and the annual Belz Lecture of the Statistical Society of Australia, Victorian Branch.

Edwin Pitman was Professor of Mathematics at the University of Tasmania from 1926 to 1962. He made fundamental contributions to statistical theory, in particular to nonparametric inference; as well as some important

contributions to distribution theory. He was much in demand as a Visiting Professor, especially to the United States, which he visited several times. He is remembered through the Pitman Medal, awarded from time to time to members of the Statistical Society of Australia chosen for their "high distinction in Statistics". So far ten such medals have been awarded, beginning with the award to Pitman himself. There is also the EJG Pitman Prize, awarded "for the most outstanding paper presented at an Australian statistical Conference by a young statistician".

These are just brief outlines, but they may help to remind members of a couple of pioneers of Statistics in this country. An obituary notice of Belz is given in *AJS* 17 (1975), pp.56-57, and an outline of Pitman's life has been published by the Australian Academy of Science.

Evan J. Williams

FASTS Circular for September

1. New Minister

The modification of John Moore's ministerial responsibilities to directly include science, technology and industry offers some interesting possibilities for the science and technology community. It gives science and technology a direct voice in Cabinet discussions, a position FASTS has long advocated and specifically recommended to Mr Howard in 1996.

Our view is that S&T are pivotal to a number of the biggest portfolios, such as Education, Environment, Primary Industry, and Telecommunications; and that only a strong direct advocate in the Cabinet room will enable Australia to gain full benefit from the work of its scientists and technologists.

The arrangement should also strengthen the connection between science and technology, and industry. This has been the weak link in Australia - we have many clever ideas, but the role of industry in developing them and bringing them to the benefit of the community has been significantly below standards reached by comparable nations.

The portfolio has been renamed, from Industry Science and Tourism, to Industry Science and Technology. This seems a much more logical arrangement by any measure.

The downside is that we have lost an enthusiastic and accessible Minister in Peter McGauran, at a crucial time for science and technology and for its interface with industry.

His departure threatened to set back the process of developing new and better policies in science, technology and industry, and consideration of several major reports, including the Mortimer Report, the Stocker Review, and the Goldsworthy Report.

Minister McGauran had also been a strong supporter of the Marine Science and Technology Plan, and it will be important to maintain the momentum of this initiative.

By selecting Minister Moore to fill the gap, the Government has found a neat solution to the changeover problem as well as boosting the presence of science and technology in major Cabinet discussions.

It remains now to be seen how responsive the Minister is to the policies and ideas formulated by grassroots scientists and technologists. We hope to be able to address him directly on issues of interest to members at the FASTS' Council meeting in November, as well as meeting with him before that date.

2. CRC Inquiry

DIST has invited FASTS to make a submission to the inquiry being conducted jointly by Department of Industry, Science and Technology and the Department of Finance.

The review will make recommendations on ways the CRCs and the CRC Program can be refocussed to become stronger commercial entities, by attracting private sector financing and reducing the call on public sector funding.

Submissions have to be lodged by 31 October, and the review is scheduled to be delivered to Government by 30 December. Peter Cullen is a logical leader to draft the FASTS' submission.

We would welcome ideas from Member Societies. Please send them to the FASTS office: fasts@anu.edu.au.

This fits the Budget timetable, and it seems that the future of the CRC Program will be dertermined in the Budget to be brought down on May 12 next year. This means that decisions will be made in November-December this year.

3. FASTS meets David Mortimer

While I was in Italy, President-elect Peter Cullen and Past-President Graham Johnston met David Mortimer to discuss FASTS concerns about his report "Going for Growth".

FASTS' support for trying to increase growth in the Australian economy, and simplifying and focussing assistance to Business was reiterated; as were our concerns about his recommendations on the CRC Program, the R&D Corporations, and external earnings targets for CSIRO, AIMS, ANSTO, and Universities.

4. FASTS' Policy under Revision

A revised version of our 20 page Policy Document is set to be released early in the new year, in time to influence Budget deliberations.

The current document was launched shortly after the current Government came to power, and many things have changed in that period. It is time to revise our priorities and look at new opportunities and new areas of concern.

Some things have not changed - the need to fund infrastructure in universities, and the impending shortage of qualified teachers of mathematics and science.

Other issues have emerged or gained greater emphasis, such as the difficulties young scientists have in establishing a career in research, the very real threats to the CRC program, and the need to work out the next generation of programs to support industrial R&D.

All Member Societies have been invited to suggest changes (direct to Ken Baldwin, at the ANU: Kenneth.Baldwin@anu.edu.au); and will be given an opportunity to discuss the draft policy at Council on November 20.

Members will have several opportunities to comment: when the new draft is posted on the FASTS' web before Council, and after Council when the modified draft will be available for comment.

5. PMSEC

The next PMSEC meeting has the tentative title of "Science, engineering and technology for employment". Obviously it will focus on the capacity of S&T to generate jobs.

FASTS suggestions have been incorporated in the program for the day, and I have also been invited to comment on the main document to be presented to the Prime Minister and his colleagues for discussion.

This meeting unfortunately will be closed to the public, so we will not be issuing our usual invitation to FASTS' Members to nominate people to attend. Peter Cullen will by then have taken over as President, and will represent FASTS at the meeting.

6. Inquiry into Institutes of Technical and Further Education

FASTS has been invited to make a submission to the House of Representatives Standing Committee on Employment, Education and Training

- on the appropriate roles of institutes of technical and further education; and

- the extent to which these roles should overlap with universities.

Jan Thomas is drafting our submission (JanThomas@VUT.edu.au), and any contributions would need to be sent to her almost immediately.

7. ANZAAS

The news that ANZAAS was moving to close down its operations was extremely disappointing but not altogether unexpected. Their problems were well documented, but perhaps it is still possible to build a new coalition which involves other groups as well as ANZAAS to carry on their work of promoting science and communication among scientists.

The objectives of FASTS include promoting the public understanding of science, and enhancing and facilitating communication in the scientific community.

I believe that any proposals for a successor to the ANZAAS Congresses can only succeed if they are solidly supported by the broad science community.

While FASTS has yet to take a formal position on the matter, we will be part of any such discussions.

8. ANZAAS Medallist

Congratulations to former President of FASTS Graham Johnston, on being awarded the ANZAAS Medal for 1997 for his contributions to science, in particular to the development of science policy.

He is a member of ANZAAS, and has just set up a web site to promote informed discussion on its future. The site already contains press reports from Robyn Williams, Leigh Dayton and Graeme Leech, plus the ANZAAS accounts, a report of the AGM, and the ANZAAS

constitution. The URL of the site is:
http://www.usyd.edu.au/su/pharmacology/anzaas

9. Additional Health Research Funds

Board Member David Tracey attended a meeting of the Australian Society for Medical Research (a FASTS' Member), at which the ASMR plans to lobby Government for increased medical research funds were unveiled.

The ASMR has employed Protocol Management Group to manage their campaign to increase the health and medical research budget, and calculated they had 143 days to influence the next Budget round. This is of course a pre-election Budget, when Governments tend to be most receptive. The FASTS' campaign will be built around the revised policy document, and the "Ten Top Policies" as identified by Council and the Board.

10. A Rock for each of us

This reminds us all to be conscious of the opportunity in the next two to three months to influence politicians on relevant budget issues. Please let me have your ideas on priority budget ideas.

Postal:	PO Box 218, Deakin West, ACT 2601
Phone:	02 6257 2891 (work); 02 6249 7400 (home)
Fax:	02 6257 2897
Mobile	0411-704 409
Email:	fasts@anu.edu.au
Web address	http://www.usyd.edu.au/su/fasts/

Joe Baker

Toss Gascoigne

There were some errors present in the Membership Address List that was posted with the August issue of the Newsletter. We regret any inconvenience that this may have caused any member

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

10th Australian Joint Conference on Artificial Intelligence, 2-4 December 1997, Perth.
Information: http://www.cs.curtin.edu.au/~ai97/, ai97@cs.curtin.edu.au or David Dowe, dld@cs.monash.edu.au. (Further details in Newsletter 80.)

Mathematics in Industry Study Group, 2-6 February 1998, Queensland University of Technology, Brisbane
Information: Website http://www.math.fsc.qut.edu.au/misg98.html; Professor Sean McElwain, School of Mathematical Sciences, Queensland University of Technology, GPO Box 2434, Brisbane QLD 4001; tel: (07) 3864 5185; fax: (07) 3864 2310; email misg@fsc.qut.edu.au (Further details in this issue.)

The International Environmentrics Society Conference (TIES98), 3-6 July 1998, Jupiter's Casino, Gold Coast.
Information: Alice O'Neil, CSIRO Mathematical & Information Sciences, PO Box 120, Cleveland QLD 4163; tel. (07) 3826 7212; fax (07) 3826 7304. (Further details in this issue.)

14th Australian Statistical Congress, 6-10 July 1998, Jupiter's Casino, Gold Coast.
Information: ASC14, School of Mathematical Sciences, Queensland University of Technology, GPO Box 2434, Brisbane QLD 4001; email asc14@qut.edu.au; fax (07) 38642310. (Further details in Newsletter 78 & this issue)

There is a list of Australasian statistics conferences for 1997 and 1998 at:

http://www.maths.uq.oz.au/~gks/webguide/conf.html

ASC14
14th Biennial Conference of the Australian Statistical Society Inc,
Gold Coast
6 - 10 July 1998

The organization of ASC14 (the 14th Biennial Conference of the Australian Statistical Society) is now well underway. It will be held at Conrad Jupiters (on the Gold Coast in Queensland) on 6-10 July 1998. This is a reminder to mark these dates in your diary and enjoy "a warm winter conference in the Sunshine State". We will be overlapping for one day with TIES - The International Environmetrics Society - who will be holding their conference at Conrad Jupiters on 3 - 6 July 1998.

The theme of this conference is "Statistics in Context". The keynote speakers are Norman Breslow (University of Washington), John Hartigan (Yale University), Trevor Hastie (Stanford University), Frank Kelly (Cambridge University), David Siegmund (Stanford University), Alan Welsh (Australian National University) and Doug Zahn (Florida State University). Both John Hartigan and David Siegmund are being sponsored by the Centre for Mathematics and its Applications, Australian National University, while Doug and Andrea Zahn are jointly sponsored by the Environmetrics Conference.

It is expected that David Morganstein (Westat) will present the Ken Foreman Lecture which is sponsored by the Australian Bureau of Statistics. The Bureau will also sponsor the Welcome Reception on the Sunday evening before ASC14. Des Nicholls will deliver the Presidential Address and award the Pitman Medal in recognition of distinguished contributions to statistics.

The proposed panel sessions include Computer-Intensive Methodology and Applications to Medical Research (organized by Kim-Anh Do and Petra Kuhnert), Design and Estimation in Survey Management (Susan Linacre),

Experimental Design (Elizabeth Billington), History of Statistics in Australia (Joe Gani), Information-Theoretic Estimation (David Dowe), Real Statistical Education for Real People (Helen MacGillivray), Statistics in Sport (Hugh Morton), and Time Series in Context: Chaos, Cash and Coded Communications (Rodney Wolff). If you are interested in organizing a panel session, please contact the chair of the program committee (via one of the addresses given below). Because of time constraints, not all proposed panels may be accepted. Selection will be based on importance, originality, focus, timeliness of topic, expertise of proposed panel and the potential for informative (and even controversial) discussion.

The March 1998 issue of the SSA newsletter will contain registration forms (registrations due 31 May), information on the format of contributed papers and posters (abstracts due 30 April) and information on the talks by the keynote speakers.

For more information, please see our URL:
http://www.math.fsc.qut.edu.au/asc14.html

or contact us via our e-mail address:
asc14@qut.edu.au

our mail address:
ASC14
School of Mathematical Sciences
Queensland University of Technology
GPO Box 2434, Brisbane Qld 4001

or on our facsimile number:
(07) 3864 2310

Looking forward to seeing you at ASC14

Kaye Basford
Chair, Program Committee

The International Environmetrics Society Conference
Gold Coast
3 - 6 July 1998

The 9th International Conference on Quantitative Methods for Environmental Sciences (TIES98) will be held at Conrad Jupiters (on the Gold Coast in Queensland) on 3-6 July 1998. This conference is being run in conjunction with the 14th Australian Statistical Conference. On Monday 6 July we are sharing speakers with ASC14.

The major theme of the conference will be "Environmental Risk and Resource Management Policies that Integrate Environmental, Social and Economic Objectives".

Speakers at the conference include Larry Cox (US EPA), Noel Cressie (Iowa State University), Doug and Andrea Zahn (Florida State University). The John Stuart Hunter Lecture will be given by Richard D. De Veaux, USA

A Steering Committee, chaired by Abdel el Shaarawi, is organizing a workshop in honour of I. B. MacNeill. This will be a one day workshop with approximately 10 papers in three areas where MacNeill has worked.

A one day workshop on Space Debris will be organised by Jeff DeTroye and Patrick McDaniel.

Other sessions planned are Measuring Soil Biodiversity (Bronwyn Harch), Analysis of Messy Data (Eddy Campbell), Environmental Decision Support (Tony Jakeman), Environmental Indicators (N. Phillip Ross), Marine Modelling (Jerzy Filar) and Ranking Methods (M Alvo).

If you are interested in organising a session, please contact us by email.

We are also putting together a social program.

For more information, please see our URL:

http://WWW.sa.cmis.CSIRO.AU/ties98/ or contact us via our e-mail address:

ties98@cmis.csiro.au.

The postal address is

TIES98
C/ Alice O'Neil
CSIRO Mathematical & Information Sciences
P.O. Box 120
Cleveland QLD 4163

Tel: (07) 3826 7212
Fax: (07) 3826 7304

Mathematics in Industry Study Group (MISG)
Queensland University of Technology (QUT), Brisbane
2 - 6 February 1998

The Centre in Statistical Science and Industrial Mathematics in the School of Mathematical Sciences will host the 14th MISG, a Special Interest Group of ANZIAM, from February 2 - 6, 1998.

More information and Registration

There is a brochure availaable from Professor McElwain (see below). Alternatively, you can browse the MISG 1998 website for both information and registration:
http://www.math.fsc.qut.edu.au/misg98.html

Contact information:

Professor Sean McElwain
School of Mathematical Sciences
Queensland University of Technology
GPO Box 2434
Brisbane QLD 4001

Tel: (07) 3864 5185
Fax: (07) 3864 2310
Email: misg@fsc.qut.edu.au

THE UNIVERSITY OF
NEW SOUTH WALES

MACQUARIE
UNIVERSITY

THIRD ANNUAL SUMMER STATISTICS WORKSHOP

TOPIC :   Spatio-Temporal Modelling

DATE :   9am - 5pm
       Friday 13 February 1998

VENUE :   Macquarie University

Further details to be announced

Enquiries:

Victor Solo   William Dunsmuir
Professor of Statistics   Professor of Statistics
Macquarie University   University of New South Wales
vsolo@zen.efs.mq.edu.au dunsmuir@solution.maths.unsw.edu.au

OVERSEAS CONFERENCES

International Conference on Health Policy Research: Methodologic Issues in Health Services and Outcomes Research, 5-7 December 1997, Washington, DC, USA.
Information: American Statistical Association, 1997 Health Policy Research Conference, 1429 Duke Street, Alexandria, VA 22314-3415, USA; email healthpolicy@monmouth.com; website http://www.monmouth.com/~healthpolicy.

International Conference on Statistical Inference, Combinatorics and Related Areas, 18-21 December 1997, Banaras Hindu University, Varanasi, India.
Information: Satya Mishra, Department of Mathematics and Statistics, University of South Alabama, Mobile Alabama 36688, email mishra@mathstat.usouthal.edu; fax +1 334 460-7969 or B.N. Pandey, Department of Statistics, Banaras Hindu University, Varanasi, UP 221005, India; email bnpandey@banaras.ernet.in; or B.D. Sharma, Department of Mathematics, Xavier University of Louisiana, New Orleans, LA 70125, email bsharma@mailxula.edu, fax +1 504-482-1561. Website http://www.math-stat.usouthal.edu/bhu97conf.

Complexity and Information - Theoretical Approaches to Biology, 5-9 January 1998, Maui, Hawaii.
This will be held as part of the 3rd Pacific Symposium on BioComputing (PSB-3, 1998).
Information: Dr David Dowe, Department of Computer Science, Monash University, Clayton VIC 3168; dld@cs.monash.edu.au; fax (03) 9905-5146; http://www.cs.monash.edu.au/~dld/PSB-3/PSB-3.Info.CFPs.html

First International Applied Statistics in Industry and Manufacturing Conference, 23-25 February 1998, Orlando, Florida, USA.
Information: Bradley Brown, Conference Chairman, email bjbrown@eagle.cc.ukans.edu; fax +1 (913) 841-2133; mail Brad Brown, ISAI, PO Box 189, Mulvane, KS 67110, USA.

Agricultural Statistics 2000, 18-20 March 1998, Washington, DC, USA.
Information: Program Chair, Fred Vogel, USDA/NASS, Room 5801 South Building, 1400 Independence Avenue SW, Washington, DC 20250-2000, USA; email fvogel@nass.usda.gov; fax +1 (202) 690-1311; web site http://www.crm.umontreal.ca.

International Biometric Society (ENAR) Spring Meeting,
27 March - 1 April 1998, Pittsburgh, Pennsylvania, USA.
Information: ENAR Conference Manager, 11250 Roger Bacon Dr., Suite 8, Reston, VA 22090 USA; fax +1 (703) 435-4390.

International Conference in Reliability and Survival Analysis, 21-24 May 1998, Northern Illinois University, De Kalb, Illinois, USA.
Information: Nader Ebrahimi, Division of Statistics, Northern Illinois University, DeKalb, IL 60115, USA; fax +1 (815) 753 6776; email icrsa@math.niu.edu; web site http://www.math.niu.edu/StatDiv/icrsa98/.

Fifth International Applied Statistics in Industry and Manufacturing Summer Conference, 1-3 June 1998, San Diego, California, USA.
Information: Bradley Brown, 5IASIM Conference Chairman, email bjbrown@eagle.cc.ukans.edu; fax +1 (913) 841-2133; mail Brad Brown, ISAI, PO Box 189, 1998 Mulvane, KS 67110, USA.

ICOTS-5 The Fifth International Conference on Teaching Statistics, Singapore, 21-26 June 1998.
Information available from ICOTS-5 Secretariat, email ctmapl@singnet.com.sg or fax +65 299 8983 or Brian Phillips <bphillips@swin.edu.au> Fax 03 9819 0821 http://www.nie.ac.sg:8000/~wwwmath/icots.html

Seventh International Congress of Ecology, Frontiers of Statistical Ecology with Environmental Statistics, 19-25 July 1998, Florence, Italy.
Information: Prof. Wolfgang Urfer, Department of Statistics, University of Dortmund, D-44221 Dortmund, Germany,
tel. +49 231 755-3121, fax +49 231 755-5303, email urfer@ omega.statistik.uni-dortmund.de or Dr Phil M. Dixon, Savannah River Ecology Lab, University of Georgia Drawer E, Aiken SC 29802, USA, tel. +1 803 725-2472, fax +1 803 725-3309, email dixon@ srel.edu.

13th International Conference on Statistical Modelling, 27-31 July 1998, New Orleans, Louisiana, USA.
Information: Brian D. Marx, Department of Experimental Statistics, Louisiana State University, Baton Rouge, LA 70803-5606; email brian@stat.lsu.edu; fax +1 (504) 388-8344; website http://stat.uibk.ac.at/iwsm.

International Congress of Mathematicians 1998, Session on Mathematical Software, 18-27 August 1998, Belin, Germany.
Information: Winfried Neun, Konrad-Zuse-Zentrum, Takustrasse 7, D-141195 Berlin, Germany; email neun@zib.de.

COMPSTAT'98, 24-28 August 1998, Bristol, UK.
Information: COMPSTAT'98, Professor Roger Payne, Statistics Department IACR-Rothamsted, Harpenden, Herts AL5 2JQ, United Kingdom; fax +44 1582 760 981; email compstst-98@bristol.ac.uk;
website http://www.stats.bris.ac.uk/COMPSTAT/

SOCIETY AND BRANCH PRESIDENTS AND SECRETARIES

Central Council
President: Prof. D. Nicholls
Secretary: Dr N.C. Weber
School of Mathematics & Statistics
The University of Sydney   NSW   2006

New South Wales
President: Prof. D. Griffiths
Secretary: Ms J. Kelly
AGB McNair
PO Box 507
North Sydney   NSW   2059

Canberra
President: Dr R.B. Cunningham
Secretary: Ms J. Webb
Australian Bureau of Statistics
PO Box 10
Belconnen   ACT   2616

Western Australia
President: Dr K. Vijahan
Secretary: Dr I.W. Wright
School of Mathematics & Statistics
Curtin University of Technology
Bentley   WA   6001

Queensland
President: Dr G. Smyth
Secretary: Dr R. Wolff
School of Mathematics
Queensland University of Technology
GPO Box 2434
Brisbane   QLD   4001

Victoria
President: Dr G. Laslett
Secretary: Mr G. Bruton
Division of Econometrics
Monash University
PO Box 197
Caulfield East   VIC   3145

South Australia
President: Ms S. Pattison
Secretary: Dr G. Glonek
School of Information Science & Technology
Flinders University of South Australia
GPO Box 2100
Adelaide   SA   5001

SECTION CHAIRS

Statistics in the Medical Sciences
Dr J. Carlin
Clinical Epidemiology & Biostatistics Unit
Royal Children's Hospital
Flemington Road
Parkville   VIC   3052

Statistics in the Biological Sciences
Assoc. Prof. K.E. Basford
Department of Agriculture
University of Queensland
Brisbane   QLD   4072

Survey and Management
Ms S. Linacre
Australian Bureau of Statistics
PO Box 10
Belconnen   ACT   2616

Statistical Education
Mrs P. Shaw
School of Economics and Financial Studies
Macquarie University   NSW   2109

Statistical Computing
Dr G. Stone
CSIRO Mathematical and Information Sciences
Locked Bag 17, North Ryde   NSW   2113

Industrial Statistics
Ms T. Dickinson and Dr G. Robinson
CSIRO Mathematical and Information Sciences
Private Bag 10, Clayton   VIC   3168

Young Statisticians
Miss V. Wheway
BHP Research
PO Box 202
Port Kembla   NSW   2505

SUBSCRIPTIONS AND ADVERTISING

The Newsletter of the Statistical Society of Australia is supplied free to all members of the society. Any others wishing to subscribe to the Newsletter may do so at an annual cost of A$10.00 (A$8.00 if also a subscriber to the AJS), for an issue of four numbers.

Members are requested to notify their local branch secretaries (see this page of the Newsletter) of change of address, so that Newsletters and Journals can continue to be despatched to them.

Advertising will be carried in the Newsletter on any matters which the Editors feel are of interest to the members of the Society. For details of advertising rates etc. contact either the Editors or Mr E. Brinkley at the same address.

Enquiries and subscriptions should be sent to:
Statistical Society of Australia Inc.
GPO Box 573,
CANBERRA, ACT 2601.
Fax: (02) 6249 8266