

Application of EM algorithm in Fisheries Data

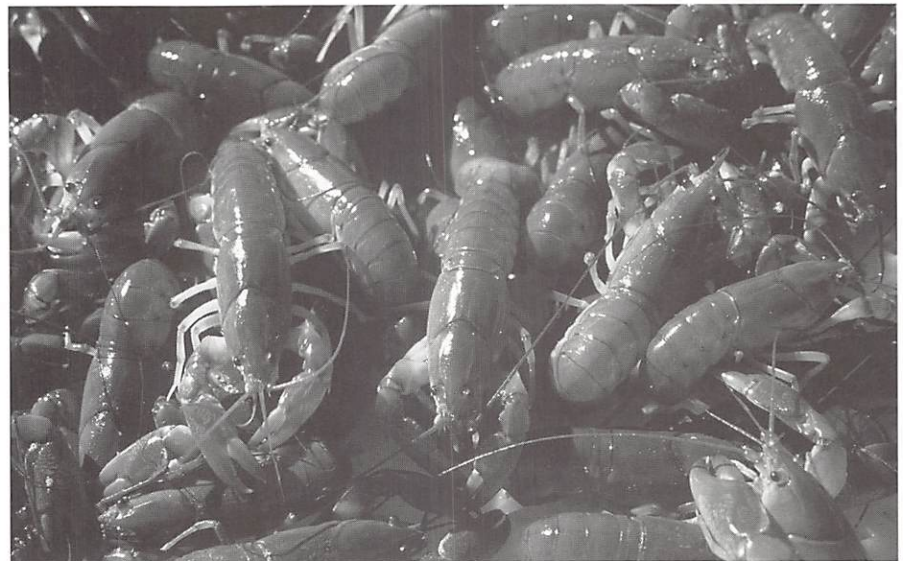
(Yabbie, Yabbie, Yabbie!)

Dr Henry Yuk Wing Cheng gave a very enthusiastic talk to the Western Australia branch about how FISH can also have a MARDI GRAS to express their sexual preferences. Various phrases associated with such activities flew past the very colourful and live samples of magnificent shell-fish that Henry pulled out of a plastic bag under the front desk. After the opening slides I was not sure whether Henry was going to lead us into the mating calls of these shell-fish, but he composed himself and got stuck into the data, describing the modelling of their growth rates and age to maturity, and relating this to possible explanations for how and why they change their SEX.

Seems like when these creatures get bored they change their sex!

Henry described the work of the statistics group at Fisheries and gave an outline of the models that have been fitted to data from various species of fish. The list of examples went as follows:

- Fitting a mixture of multivariate normal distributions – pearl oyster.
- Fitting a mixture of linear regressions – snapper.
- Fitting a mixture of nonlinear regressions – Australian herring.
- Fitting a mixture of nonlinear regressions with co-intersection points – sea mullet.



- Fitting a nonlinear upper bound regression – yabbie.
- Fitting a mixture of time series (autoregressive) – western rock lobster.

All of these models were fitted using Henry's version of the EM algorithm in which he has improved the convergence for the estimation of the model parameters.

They all had interpretable values which the fishery scientists agreed were real since they explained the

changes in SEX or some other significant and momentous occurrence for the creature!

He also described future work in which the EM algorithm will be used for their stock assessment model and to fit a non-Gaussian mixed effects model for greenlip abalone and trochus.

The more I looked at the data the more I could see a yabbie in every curve. Pity that Henry did not bring a few for the barbie!

Mario D'Antuono

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SSAI Service Awards

The SSAI Service Awards recognise "sustained and significant" service to the Society. The recipients of the award have given extensive service to the Society at Branch level and have also contributed to the central activities. Central Council considers nominations for Service Awards at its February meeting. In 2001 two Service Awards were made to the following people.

Anthony Pakes (Western Australian Branch)

Tony has a long and distinguished record of contribution to the Society and its Branches. He has been a member of the executive committees of the Victorian and Western Australian Branches for a total of 16 years, during which he has assumed the positions of Secretary and Treasurer of the Victorian Branch and President, Vice-President and Secretary of the Western Australian Branch. He has been Central Council delegate for both Branches on many occasions. Tony has served since 1989 as Associate Editor and Editorial Board member of the *Australian Journal of Statistics* and the *Australian and New Zealand Journal of Statistics*, and continues to do so with distinction.

Jane Matthews (Victorian Branch)

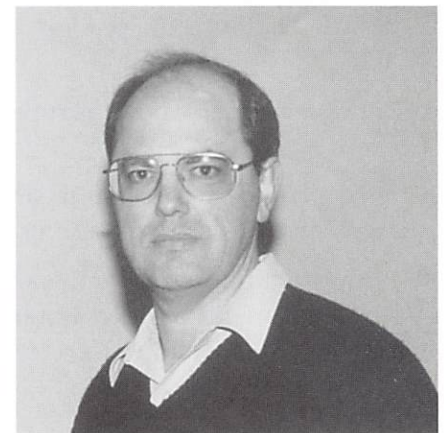
Jane has been a highly active and effective member of the Victorian Branch for any years, including five years on the Branch Council and two as President. She presented the Belz Lecture in 1998 and was delegate to Central Council during the term of her Presidency.

At the national level Jane has made a very substantial contribution as a member of the Committee for Honorary Life Members and Pitman Medal, and provided invaluable service as an inaugural member of the Accreditation Committee during which the process was initiated and implemented.

Honorary Life Membership

The award of Honorary Life Member is made in recognition of service to the discipline of statistics and to the Society at both Branch and national levels. The service should have achieved a significant impact and distinction and/or have been effective in fostering change. In 2001 Central Council awarded Honorary Life Membership to Neville Weber.

Neville has made an outstanding contribution to the statistics profession through his University, through the Statistical Society of Australia Inc. and through other professional activities. Since 1979 Neville has held various positions of leadership in SSAI, including six years of distinguished service as Secretary of the Society. He had previously been Chair of the Statistical Computing Section (1985-92) and served with distinction as an Associate Editor of the *Australian Journal of Statistics* from 1989 to 1994. He has also been an Associate Editor of the *Bulletin of the Australian Mathematical Society* since 1995 and has been a Council member, Treasurer and Auditor of the NSW Branch. His research activities range from theoretical to applied. He has extended the frontiers of modern mathematical statistics, particularly in the area of asymptotic approximations for U-statistics, and has gained an international reputation for research in the areas of exchangeability and re-sampling methods.



Neville has promoted the discipline of statistics through teaching excellence and education administration. He was Director of the Statistics Teaching Program at the University of Sydney from 1994-6, is currently Director of Postgraduate Studies, and has contributed significantly to the discipline through activities of the Board of Studies in NSW, where he was Chair of the 2/3/4 Unit Mathematics Examination Committee in 1998, a member of the same Committee 1995-7 and an Assistant Supervisor of Marking for eight years. He was a founding committee member of the University of Sydney Statistical Consulting Service and its Coordinator in 1988-90. He remains active in consulting on the University campus and outside and holds both C.Stat from the RSS and A.Stat from SSAI.

In 1991 Neville was elected to membership of the ISI in recognition of his contributions to statistics. He has been actively involved in conference organization, particularly as convenor of the first Young Statisticians' Symposium (1982), convenor of the 1985 national symposium STATCOMP-MEDSTAT '85 at Macquarie University and a member of the organizing committees for the 5th Australian Statistical Conference, Sydney (1980), STATCOMP 82 and STATCOMP 83.

The WA Branch of the Australasian Young Statisticians recently held a workshop for young statisticians in Western Australia. Sponsored by the WA Branch of SSAI, Data Analysis Australia and Roche Products Pty Ltd, the workshop was held on Friday 16th February at the Royal Perth Yacht Club with enviable views of the Swan River and Perth's CBD.

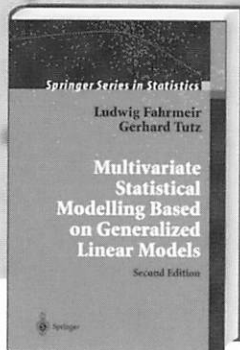
The 2001 workshop built on the aims of the previous 1994 and 1999 workshops of developing, maintaining and improving contact and support amongst young statisticians. It was a positive sign for the statistical industry in Western Australia to see a turnout of 38 participants - a blend of undergraduates, post-graduates and recent graduates in statistics or related disciplines. The workshop was a full day program and was open to anyone with an interest in statistics. Participants listened to presentations by invited and other speakers and took advantage of the opportunity for discussion and networking with the speakers and other participants. At the end of the day, students walked away having gained a vast amount of information, made new friends and met a number of key professionals in the WA statistical industry.

The combination of a perfect venue, a great group of people and dedication of the organisers ensured that the workshop was thoroughly enjoyed by all. Speakers from a variety of industries, including mining, environmental statistics, health research, statistical consulting and market research appeared at the workshop and presented practical talks that focussed on the role that statistics play in their careers. Our keynote speaker was Mrs Vivienne Snowden, Director and Consultant Geostatistician of Snowden Mining Industry Consultants, who gave an inspiring talk on how statistics intermingled with geology has led to extensive travel and a rewarding career.

As in previous workshops, young statisticians were encouraged to present talks about research or projects they may be involved in or to share their experiences as a young statistician. All four Young Statistician speakers presented interesting talks, ranging from topics such as "Priority Intensive Follow Up", to tips and helpful hints for students interested in post-graduate research studies in a presentation entitled "The First Year of my PhD". Our judge and keynote speaker Mrs Vivienne Snowden awarded the Roche Products sponsored prize of \$200 for best presentation by a young statistician to Helen Teasdale from the Australian Bureau of Statistics, Perth office. Helen's talk on "an Overview of the Labour Price Index" showed combined theoretical and practical examples of how the ABS collects, measures and estimates the index. Helen also briefly explained the various innovative approaches used by the ABS to minimise respondent burden and measure accuracy. Congratulations Helen!

While everybody who contributed to the success of the workshop was thanked on the day, I'd like to take this opportunity to thank these people again in front of a wider audience. The continued support of our sponsors, the Statistical Society of Australia Inc (WA Branch), Data Analysis Australia and Roche Products Pty Ltd makes events such as these possible. Special thanks in particular and respectively to Dr Robin Milne, Dr John Henstridge and Dr Phillip McCloud. Special thanks are also extended to my co-organiser Jodie Thompson from Data Analysis Australia, without whose dedication and commitment the workshop would not have been a success. Thank you to Mr PJ Nickels who arranged the Royal Perth Yacht Club venue for us. I would also like to thank our speakers for adding to the atmosphere on the day and for in-

Springer for Statistics



L. Fahrmeir, G. Tutz

Multivariate Statistical Modelling Based on Generalized Linear Models

The book is aimed at applied statisticians, graduate students of statistics, and students and researchers with a strong interest in statistics and data analysis. The second edition is extensively revised, especially in sections relating to Bayesian concepts.

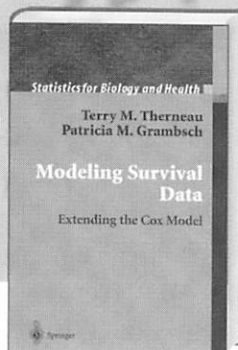
2nd ed. 2001. Approx. 535 pp. (Springer Series in Statistics) Hardcover * **DM 169,-**; sFr 146,-; £ 58,50; FF 637,-; Lit. 186.640
ISBN 0-387-95187-3

P. Hougard

Analysis of Multivariate Survival Data

Unique in extending its coverage to include multivariate survival data — only briefly covered by other books, this book contains much material that has only been available in journal papers until now, and some of it was not available in writing at all.

2000. XVII, 542 pp. 118 figs. (Statistics for Biology and Health) Hardcover * **DM 179,-**; sFr 154,-; £ 61,50; FF 675,-; Lit. 197.690
ISBN 0-387-98873-4



T.M. Therneau, P.M. Grambsch

Modeling Survival Data: Extending the Cox Model

Aimed at researchers, practitioners, and graduate students who have some exposure to traditional methods of survival analysis, the emphasis here is on semiparametric methods based on the proportional hazards model. The inclusion of examples with SAS and S-PLUS code makes the book readily accessible to working statisticians.

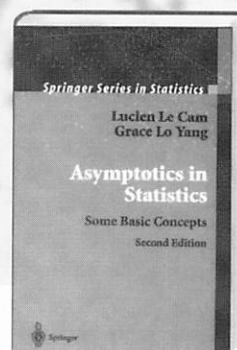
2000. XIII, 350 pp. 80 figs. (Statistics for Biology and Health) Hardcover * **DM 139,-**; sFr 120,-; £ 48,-; FF 524,-; Lit. 153.520
ISBN 0-387-98784-3

M. Taniguchi, Y. Kakizawa

Asymptotic Theory of Statistical Inference for Time Series

The primary aim of this book is to provide modern statistical techniques and theory for stochastic processes. A wide variety of stochastic processes, including non-Gaussian linear processes, long-memory processes, nonlinear processes, non-ergodic processes and diffusion processes are described.

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ISBN 0-387-95039-7



L. Le Cam, G. Lo Yang

Asymptotics in Statistics

Some Basic Concepts

This second edition is now more 'reader friendly' and also includes a new chapter on Gaussian and Poisson experiments, reflecting their growing role in the field. Much of the material has been taught in a second year graduate course at Berkeley for 30 years.

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spiring the next generation of statisticians. Finally, a special thanks to all young statisticians who participated in the workshop. Thank you!

While the workshop is over for another year, the effort of the Perth young statisticians group in the development and encouragement of young statisticians does not stop. Feedback from participants at the workshop showed support for the continuation of such events and the informal gatherings to ensure that young statisticians kept in touch. Stay tuned for further developments!

*Marleen Voortman
AYS WA State Representative*

Just when you think you know the world you live in, something crazy happens that dents your faith. For me, the faith-denting occurred when we received an envelope in the mail, requesting our presence at the wedding of Melissa Dobbie and Dave Matthews. What!

After one of the known world's longest ever engagements (seven years), Mel, Canberra Branch correspondent, and Dave, original list master for the Young Statisticians list, exchanged vows at Mel's parents house. The ever-beautiful Mel and the swash-buckling Dave were married in front of a large group of family and friends, including a non-random sample of statisticians. The non-random sample consisted of those who were able to get to Ipswich (Queensland) on Australia Day at 7 am with less than three weeks notice (see photo). Thankfully we were part of the sample, and I'm sure that everyone who was there will agree when I say it was a wonderful day. Mel and Dave, we wish you the very best for a long and happy life together.

Further news comes of bundles of joy:

Perennial Young Statistician Paul Livingstone has added to the YS pool, wife Kathy giving birth to baby Gemma on February 17. Both Gemma and Kathy are doing well. Paul has reacted to new-parenthood by adding yet another company to his already growing list of past-employers.

Good news on the baby front in the Gurrin household as well. Young David Gurrin ventured into the world three days prior to New Years Eve 2000, determined to witness the beginning of the new millennium. Proud father Lyle, seen holding lambs in the last newsletter, reported that David was born to the sound of Brian Lara's off stump being rattled during the torturous summer cricket season. The Gurrin's have now moved to Melbourne, bringing to an end many fine years of WA Branch Council service for the man otherwise known as Gumby.

Jason Boland



The happy day, at slightly later than 7 am in the morning: (from left to right) Ann Cowling, Michael and Andrea Findlay, the happy couple, Susan Hoffmann and Jason Boland

NEW SOUTH WALES



Statistical Squirrel's

Statistics and Performance Measurement

Wednesday March 21, 2001. Sheriff Robertson had come to hold the AGM of the NSW Branch. Nick, Fisher of men, had come to deliver the Lancaster lecture (H.O., not Burt, although given the Western theme you would be excused if you thought so). There's gonna be a gun fight!

The Sheriff got things underway and apologies were taken (with one coming from Peter Cook but not Dudley Moore, possibly because it was the wrong genre). Speaking with the authority and dignity as befits a man of his position, the Sheriff discussed the previous year's council business and plans for the coming year. The rubber stamp was duly applied in all the appropriate places and the floor was left open for the grand Nick Fisher.

Rising to much applause, Nick began the Lancaster lecture (H.O., not the WWII bomber) with a preparatory quiz. Asking the audience to "Think of one or two measures that currently apply to you that you feel lead to bad outcomes" and "What would you suggest as alternative measures with the same purpose, from which good outcomes are likely to result?" Nick got several responses from which he launched into his talk.

Nick stated that this talk (subtitled "A case study in Zoom, Normal and Pan statistics") was a talk about the most important lesson he ever learnt from Lancaster (H.O., not Henry Plantagenet, 3rd Earl of Lancaster, died 22 September 1345). For the life of me I cannot remember whether

Nick said what the lesson was. Sorry. Anyway, Nick introduced the performance measurement problem (he had some great handouts on the talk so if anyone wants one they can probably ask for them) and discussed the natural habitats for statistics. Why, oh why, he pleaded, has performance measurement not been a part of the statistical arena? After all, many of us are attracted to statistics just because it is intimately involved with applications¹.

There are many reasons to worry about performance measurement. Some measurements are inherently unsound. For example, morale is not measurable. Academic citations, another performance measurement is a good example of bad measurement. If I write a bad paper (or should that be when?) everyone will want to take it down, and I thereby have a heavily cited paper.

Statistics, quoth Nick, is the science of managing uncertainty (although I must admit that I was not quite sure about that...). Introducing the Organisational Performance Measurement (OPM) System, Nick showed us a model for performance measurement that included a set of principles, a paradigm for measurement and a structure for organisational performance measures. The system also produced an enabling methodology that helps define specific measures and provides a linkage between measurement, business process and continuous improvement. This, stated Nick, was the carriage work of a performance measurement system. Now it was time for the engine (or horse, if I may continue the Western theme).

Now, a horse is a horse, of course, of course, but this horse has a special name – Customer Value Analysis (CVA). CVA provides a way of quantifying the relative value an enterprise adds for its customers, based on two key components: relative satisfaction with the quality of the product or service received and relative

satisfaction with the price paid. Outlining CVA's origins, Nick went on to show how CVA could be used to assess performance measurement and where the pan, zoom and normal statistics fitted in. Unfortunately for you, my loyal readers, this involved many tree diagrams, tables and graphs that I am unable to adequately explain in the space allotted me. All this mere squirrel can do is let you know that it was bloody interesting stuff.

Concluding his valedictory talk as a professional scientist with what can only be described as Nick's own personal stamp of distinction, he bade the big crowd goodbye, thunderous applause ringing in his ears. Many thanks Nick, for an interesting Lancaster lecture (H.O., not Sarah, 20 year old bit part American actress) for a long and distinguished contribution to the profession we all love. Till next time (and shedding a few silent tears)...

Statistical Squirrel

¹ This line came from Nick's talk – see, I told you he had good handouts.

WESTERN AUSTRALIA

Medical Statistics at Murdoch University

Professor Ian James from Murdoch University and esteemed President of our Society, told us about the new Centre for Clinical Immunology and Biomedical Statistics that has been established at Murdoch University. The centre is funded by Glaxo and contains about 13 members who work at either Royal Perth or Murdoch. The centre is the result of a long association between Mathematics and Statistics at Murdoch University and Clinical Immunology at Royal Perth Hospital which focuses on issues which impact on the treatment and management of patients with HIV.

In recent years the use of potent highly active anti-retroviral therapy (HAART) in the treatment of HIV patients has led to very significant improvements in prognosis and greatly improved quality of life. However a number of concerns have arisen about complications which have only become evident since HAART was introduced. Ian gave a brief over-view of the work being carried out regarding assessment of drug effects and other risk factors, individually and in combination, which appear to be associated with some complications.

The work is based on a database that was set up in 1983 by S. Mulhall which contains information on drug treatments and responses for about 900 HIV patients from all the hospitals in Perth. This is probably one of the best sources for this information in the world.

Ian finished his talk by telling us about some of the shenanigans that go on in these areas of medicine – papers withheld and then incorrectly dated, stolen posters and conferences in Monte Carlo. But the challenge of getting important answers from difficult data is very enjoyable.

Jane Speijers

Lyle, Don't Forget to Write!

Tuesday 13 March saw Dr Lyle Gurrin attend his final meeting of the Western Australian Branch of the Society before moving to Melbourne. Lyle has been a valued member of the WA Branch Committee, acting as Treasurer since 1998. You may have been under the impression that Hercules had twelve labours to perform, but the truth of the matter is that there were actually thirteen. However, having successfully kidnapped the vicious beast Cerebus from Hades against impossible odds, the Greek hero finally threw in the towel when asked to sort out the financial accounts of the WA Branch.

Lyle, however, has never shirked a challenge. Throwing himself with gusto into the world of high finance, Lyle managed to balance the books. Perhaps news of this feat travelled further than we expected here in WA. Call it coincidence if you will, but before long a bank on the east coast had tempted our financial wizard away from Perth (with talk of high salaries and the MCG being close at hand)..

Lyle's departure will deprive the WA Branch of many things. The degree of sartorial elegance on the Committee will nosedive. Our aggregate knowledge of the birth dates of American presidents will take a hefty knock. And, as a Branch, we will know less about generalized linear mixture models, glucose and sheep. All these things will, of course, leave Statistics in the West that little bit poorer. But, perhaps most important of all, the quality of the red wine served at Branch meetings may fall off. WA's loss will definitely be Victoria's gain.

Martin Hazelton

CANBERRA

Whither distance sampling?

The 2000 Knibbs lecture, held in November in Canberra, was presented by Professor Alan Welsh of the Centre for Mathematics and its Applications at the Australian National University.

The focus of the talk was the problem of undercount or incomplete detection in enumeration surveys, which are intended to estimate population counts or population abundance. Applications of this problem have been widely published in the ecological area although are not limited to those types of surveys. For example, the census undercount is a well-known illustration of the problem, although this is more of a problem in the USA than it is in Australia.

Alan considered the problem of undercount in a general context by explaining that there are two stages in a sampling scheme: 1. observe a subset of the region of interest; and 2. observe only a subset of the points of interest in this region. The confounding problem is that you can not tell from the points in the sample, whether the sample size arises from a small population size and a mild filter (or thinning process), or a large population size and severe filter. The confounding of points in the sample and the severity of the filter compromises the inference about the points in the sample and hence about the population. If details of the filter were known, then there would be no confounding and thus no problem.

To gain insight into the nature of the methodology in a simple situation, Alan concentrated on line transect sampling. The defining text on distance sampling (for ecological populations) is Buckland, Anderson, Burnham and Laake (1993), and the talk focussed specifically on the methodology for line transect sampling described in this. Details of the line transect sampling methodology were discussed and a graphical derivation of the distance sampling estimator was presented. The graphical analysis led to a new expression for the distance sampling estimator, which gives useful insights into the nature of the estimator. Alan then discussed the uniformity assumption on which distance sampling depends and described the properties of the distance sampling estimator when uniformity does not hold.

In answer to the question "Whither distance sampling", Alan acknowledged that there are some situations in which distance sampling 'works' and that through the application of statistical thinking, there are potential opportunities for better treatment of line transect sampling and distance sampling in general. Alan concluded with some insightful reflec-

tions based on his research and on distance sampling in general. For more technical details concerning distance sampling, see the paper by Barry and Welsh, which is due to appear in *JRSSB* in 2001.

The discussants were Dr Ann Cowl- ing, Statistical Consulting Unit, ANU and Mr Geoff Lee, Methodology Di- vision, Australian Bureau of Statis- tics. Both discussants thanked the speaker for his talk and generally agreed with his conclusions. Ann's discussion was based on her experi- ences with using distance sampling methodology to estimate abundance of juvenile Southern Bluefin Tuna in the Great Australian Bite. Ann ques- tioned whether distance sampling was the most appropriate method for estimating abundance in relation to animal observation studies and re- marked that Buckland et al agreed that distance sampling was not ap- propriate when there were large numbers of subjects.

Geoff discussed what uniformity meant in design-based and model- based approaches. He conjectured that the model-based uniformity as- sumption was unlikely to be useful in practice. Under the design-based paradigm, knowledge of the selec- tion probabilities (especially under the second stage of 'sampling' where only some objects are observed in the selected regions) was imperative. Provided these were known (a big IF in practice), distance sampling was a standard two-stage clustered sam- pling scheme which could be as- sessed against other competing sam- pling schemes in terms of cost, sam- pling efficiency and operational prac- ticality. For assessing under-count in the ABS's Population Census, addi- tional auxiliary information is avail- able about the geographic distribu- tion of the population (and potential undercount), and so more efficient sampling schemes than distance sampling can be and are used.

The talk was well-attended and timely as Alan left Australia in De- cember to take up a Professorship at the University of Southampton. There must have been close to a record number of attendants at the annual dinner for the branch, which was held at the Green Herring Res- taurant in north Canberra. Fine food and merriment was had by all who went.

Continuing Professional Development: RSS experiences

Professor Neville Davies of Notting- ham Trent University in the UK and Director of the Royal Statistical Soci- ety (RSS) Centre for Statistical Edu- cation, addressed the December meeting of the branch with three talks in one (a special Christmas treat!).

To begin, Neville discussed his expe- rience with serving on the RSS Pro- fessional Affairs Committee. This committee, which meets five times a year, awards RSS professional quali- fications including the Ordinary Cer- tificate, Higher Certificate, Certificate in Official Statistics, Graduate Di- ploma in Statistics, GStat and CStat.

It also has the responsibility to im- plement a policy of Continuous Pro- fessional Development (CPD) for its professionally qualified statisticians (CStat). To do this, they initially con- sidered what CPD means and what it means to do it. Nine issues concern- ing how CPD can be achieved were discussed. One of the important mes- sages for making CPD work is that statisticians need to realise and ad- mit that they have gaps in their knowledge and then do something about it. Given the SSAI are currently looking into ways of implementing CPD for our accredited members, this talk was very timely. More infor- mation on the RSS's policy of CPD is available from the URL [http:// www.rss.org.uk/cpd/index.html](http://www.rss.org.uk/cpd/index.html)

We also heard how the RSS Centre for Statistical Education has pro- vided CPD opportunities for govern- ment statisticians working at the National Statistics Office in Malawi, Africa. Malawi, being a very poor country, relies on funding and help from other nations. The RSS has pro- vided statistical help by developing an in-service training program for "data clerks" of NSO. For more de- tails of the RSS involvement in Ma- lawi, see the leading article in the RSS News of January 2001.

Finally, Neville discussed the poten- tial for using on-line learning and teaching material based on an elec- tronic learning community and de- signed for educational use across a large UK county. The Learning and Teaching Support Network (LTSN) of 24 subject centres was launched in January 2000 to promote high qual- ity teaching in higher education. One centre is Maths, Stats and OR and it is coordinated jointly between the University of Birmingham, Univer- sity of Glasgow and the RSS Centre for Statistical Education. The mission of this centre is to promote math- ematics, statistics and OR by encour- aging knowledge exchange, innova- tion and enterprise.

February workshop – an all-star cast!

On 27 February, the School of Math- ematical Sciences at The Australian National University and the Can- berra Branch of The Statistical Soci- ety of Australia presented a short workshop on some modern statisti- cal approaches that attracted the larg- est crowd seen at a meeting for some time. The attendance was very much testimony to the high calibre of the speakers.

Professor Peter Hall of the ANU got things underway with a talk on "Non-parametric construction of graphs and curves under con- straints". The talk was an excellent overview of several techniques that

might be employed to ensure graphs, curves or other quantities satisfy constraints of interest such as unimodality and boundary constraints. Three techniques were discussed: tilting, which might loosely be thought of as weighting the observed data; data sharpening, whereby the observed data are perturbed before computation in the usual way; and imputation of additional data or omission of some of the existing data. Peter described how all three approaches seek to alter the empirical CDF to ensure that the required constraints are satisfied.

Professor Sue Wilson initiated a session on "Graphical models and causality" by providing some historical insight to the work on causality and briefly discussing the notion of latent variables, path analysis, the analysis of correlation and simultaneous equation models. Sue concluded with an introduction to one of the most pivotal books in this area "Multivariate dependencies: Model, analysis and interpretation" by Cox and Wermuth (1996).

The attendees were then very fortunate to receive talks by both authors of this book, namely Professor Nanny Wermuth (Psychologisches Institut, Johannes Dutenberg-Universitaet, Mainz, Germany) and Professor Sir David Cox (Nuffield College and Department of Statistics, Oxford). Both talks were non-technical overviews of different aspects of the graphical Markov model approach to making causal inquiries.

It was described how by first allocating variables as response variables, intermediate variables or background variables one might then go about building a hierarchy of models so as to establish the chain of causality between the variable set. The roles of marginalizing and conditionalizing over given variables in providing insight into relationships between other variables were

discussed. Examples were given on several data sets including the treatment of chronic pain and the well-being of diabetic patients, which are both described in their book.

It was evident from both talks that the strength of this approach lies in its graphical representation of the dependencies and associations, because that acts both as a succinct summary of dependence and as an indication of what relationships needed to be interrogated.

Special thanks go to Sue Wilson for her efforts in organising an excellent workshop.

"You just do statistics, I do data analysis": Approaches to statistical education

As the outgoing branch president, Dr Alice Richardson of the University of Canberra presented the talk after the March AGM. Inspired by a comment from a psychology lecturer (see the title of the talk), Alice discussed some initiatives taken at the University of Canberra to attract students to study statistics, to maintain their interest during the first semester of statistics study and to stimulate them to continue studying statistics beyond their first-year course.

One of these initiatives is the 2nd/3rd-year statistics subject "The World of Chance", which students undertake to fulfil a general education requirement. Alice developed this course based on David Moore's book "Statistics: concepts and controversies" and on the courses developed in the USA called Chance, and has now taught it for three years. The subject is devoted to conveying statistical concepts and controversies and comprises 13 2-hour tutorials, which cover topics such as surveys, sampling design, experiments, designs, graphics, time series, and probability, amongst others. In each tutorial there are discussion questions and also activities which allow stu-

dents to relate statistics to real-world and everyday problems and activities. Examples of past activities range from constructing paper planes (topic: factorial design) to monitoring cars passing through traffic lights (topic: time series). The major assessment for the subject is a group project of creating a poster, which is subsequently displayed at a "Chance Fair". In the past, the topics of group posters have ranged from the typical 'Is the lotto legit?' and 'Place your bets - a study of Melbourne Cup winners' to more current topics such as 'A survey of advertisements on TV on Olympic channel vs non-Olympic channels' and 'An analysis of aircraft accidents using Bureau of Air Safety data'. Students, who take this course, take away an understanding and appreciation of the judicious use of statistics in their own field of study, as well as some hands-on experience in "doing statistics".

Alice then told us about Socrates, an on-line quiz system for the math sciences including introductory statistics. The system is web-based software with numerous modules which offer two modes: tutorial and test. The tutorial model features multiple-choice questions with on-line correction, diagnostic feedback and quiz-specific help. In the test mode, tests can be timed and results may be displayed. The sole word-processing software system used to develop Socrates was LaTeX, which is possibly a first for something like this. It also offers a sophisticated editor, collation and printing of quizzes and the ability to embed quizzes in on-line notes.

As the final initiative, Alice discussed her collaboration with the National Health Sciences Centre, which is based at the University of Canberra. As well as developing clinical trials management courses for distance education purposes, Alice has also spent time exploring the connection between Florence Nightingale and

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evidence-based nursing (e.g. see Alice's article on page 5 of the February 2001 SSAI newsletter).

Alice concluded by recognising and acknowledging the support of the statistical societies (both NZ and Australia) over the past twenty years. (It all began, when Alice entered a poster on "Graphs of a library survey" in the Statistics section of the Science Fair in 1981. She didn't get the prize for the wittiest title(!) but was awarded a certificate for participation). The evening then concluded with a group of members joining Alice for a very tasty Thai dinner in Civic.

News from the Canberra Branch

At the AGM, the following council was elected:

President: Geoff Lee, ABS

Past-president: Alice Richardson, UC

Secretary: Anna Poskitt, ABS

Treasurer: Teresa Neeman, ABARE

Councillors: Mark Westcott (CSIRO); Ian McDermid (Customs); Glenys Bishop (ABS); Hong Ooi (ANU); Ann Cowling (ANU).

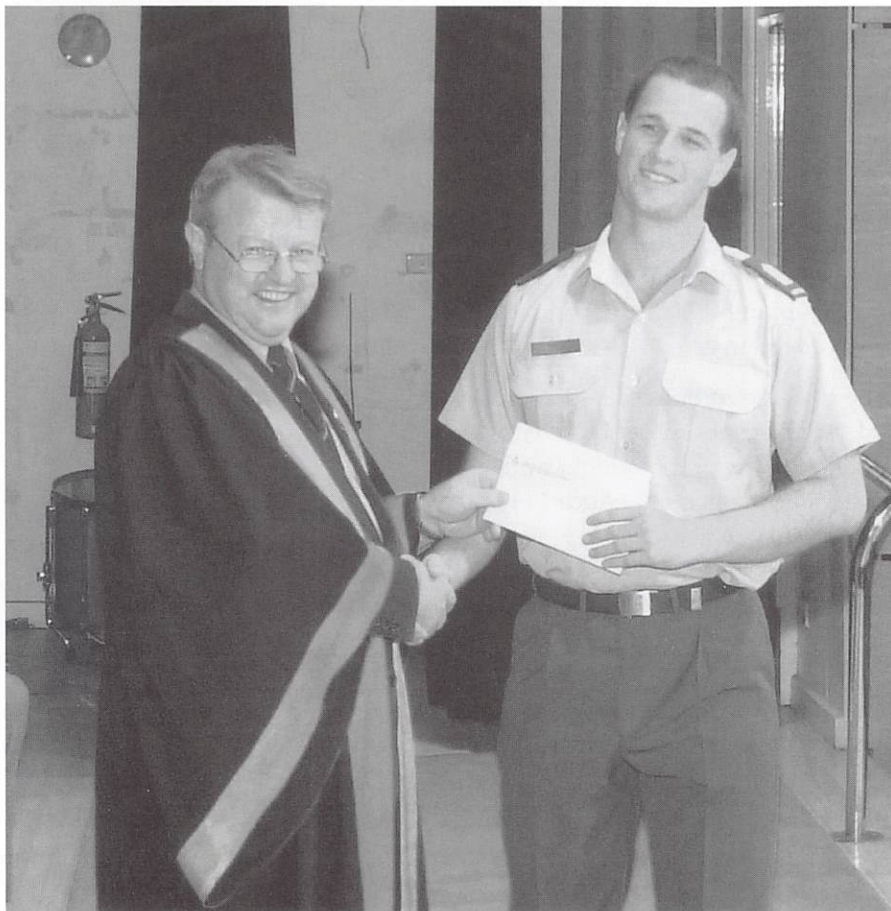
Congratulations to those people who were elected to council, and a very big thank you to those who retired from council in 2001.

Ross Cunningham has retired as Head of the Statistical Consulting Unit at the Australian National Uni-

versity. However, he's not totally retiring from statistics – he still plans to follow research interests in applying statistical science in the area of biological conservation. We wish Ross well in his retirement and hope he will still find time to remain active at a local branch level.

After two years in the position, this is my last contribution as regular Canberra correspondent. Veronica Rodriguez from ABARE has kindly volunteered to take over as the correspondent to summarise monthly meetings and other activities and news of the Canberra branch. Cheers!

*Melissa Dobbie
(and Brent Henderson for his
summary of the February workshop)*



Officer Cadet Michael Kitchin was presented with the Statistical Society of Australia prize at an Awards Ceremony held at the Australian Defence Force Academy, Canberra in December 2000. The prize was presented by the Rector, Professor Robert King.

News about members

In March this year 33 Australian scientists whose papers have been most-frequently cited by their colleagues were honoured at a ceremony in Canberra.

The ceremony was likened to awarding Oscars to scientists with the highly cited Australian authors, receiving "Citation Laureate" awards.

Our very own Peter Hall was in fact the second most cited author – a fantastic achievement – congratulations Peter !!

Congratulations are also in order for Terry Speed on being honoured with Fellowship of the Australian Academy of Science.

Australasian Conferences

CONFERENCE SUMMARY

15th Australian Statistical Conference, 3-7 July 2000, Adelaide.

Information: <http://www.sapmea.asn.au/15ASC.htm>

Australasian Biometrics and NZSA Joint Conference 2001

10-13 December 2001, Park Royal Hotel, Christchurch, New Zealand

Web site: <http://nzsa.rsnz.govt.nz/Conference/home.htm>

International Conference on Statistics, Combinatorics and Related Areas and The and The Eighth International Conference of the Forum for Interdisciplinary Mathematics, 19-21 December 2001, University of Wollongong.

Information: <http://www.uow.edu.au/informatics/maths/statconference>

There is a list of Australasian statistics conferences for 2001 and 2002 at:

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

Eighth International Conference on Statistics, Combinatorics and Related Areas

19-21 December, 2001
University of Wollongong,
Wollongong, NSW 2522, Australia

The School of Mathematics and Applied Statistics at the University of Wollongong, and the Forum for Interdisciplinary Mathematics, are proud to co-organize a three-day International Conference on Statistics, Combinatorics and Related Areas on the 25th anniversary of the Forum.

Plenary sessions, over twenty technical symposia, and contributed talks are being planned. Invited speakers include: Chris Heyde, Joe Gani, Clive Granger, Bryan Manly, Terry Speed, Richard Tweedie.

Symposia Topics

- Cointegration
- Computer Security
- Data Mining
- Ecological and/or Environmental Statistics
- Estimating Function and Quasi-likelihood
- Experimental Design
- Generalized Linear Models
- Goodness of Fit

- Image Analysis
- Industrial Data Analysis
- Multivariate Statistics
- Nonparametric Testing
- Ranked Set Sampling
- Sample Surveys
- Statistics in Finance
- Time Series

At this stage, a program of the conference is being organised by the members of the International Organising Committee (IOC). The Web site contains information about members comprising the IOC. For those wishing to contribute to a particular session, please contact the person organising that session. Those wishing to contribute outside the areas are also welcome to send their abstract. Suggestions for further topics and proposals to organise a session should be sent to the conveners or a member of the IOC. The International Association of Statistical Computing has endorsed this conference.

Postgraduate students will be encouraged to attend this conference and present their work. A selection panel will judge the presentations and make recommendation for awards.

Information about registration, sub-

mitting abstracts, symposia organisers and the venue is available on the conference website. The conference website <http://www.uow.edu.au/informatics/maths/statconference> will be updated regularly.

For further details, please contact: Satya Mishra, Department of Mathematics and Statistics, University of South Alabama, Mobile, Alabama 36688-0002, USA, tel: +1 (334) 461-1642, fax: +1(334)-460-7969, email: mishra@mathstat.usouthal.edu or Chandra Gulati, School of Mathematics and Applied Statistics, University of Wollongong, Wollongong, NSW

2522, Australia; tel: (02) 42213836, fax: (02) 42214845, email: cmg@uow.edu.au.

Overseas Conferences

International Workshop on Statistical Modelling, 1 – 6 July, Odense, Denmark.

Information: www.statdem.sdu.dk/1WSM/

International Conference of the Royal Statistical Society, 3 – July, 2001, Glasgow, Scotland.

Information: Marian Scott, E-mail marian@stats.gla.ac.uk

ProbaStat 2002, Fourth International Conference on Mathematical Statistics, 4 - 8 February 2002, Smolenice, Slovakia

Information: C/- ProbaStat 2002, Mathematical Institute of the SAS, Stefanikova 49, SK-81473 Bratislava, Slovak Republic; Fax (+4217) 5239-7316; e-mail: probastat@savba.sk

2nd International Symposium of Business and Industrial Statistics, 20 - 21 August 2001, Yokohama, Japan.

Information: E-mail: isis2@port.se.uec.ac.jp

International Conference - Ranking and Selection, Multiple Comparisons, Reliability, and Their Applications. 28 – 30 December 2002, Chennai, Tamilnadu, India.

Information: N. Balakrishnan, McMaster University, E-mail: bala@mcmail.cis.mcmaster.ca; N. Kannan, University of Texas at San Antonio, E-mail: Nkannan@utsa.edu.

Bayesian Nonparametrics (BNP) Workshop, 27 July - 2 August, 2001, University of Michigan, Ann Arbor

Information: Contact Paul Damien (pdamien@umich.edu) in Canada and the USA, Stephen Walker (s.walker@ic.ac.uk) in Europe.

Fifth International Chinese Statistical Association (ICSA) International Conference will be held at the University of Hong Kong, Pokfulam Road, Hong Kong, 17-19 August 2001.

These dates are chosen with the purpose that potential participants can easily make arrangements to attend the International Statistical Institute meeting to be held in Seoul, South Korea, on the following Wednesday.

Keynote speakers will be Professor Peter Hall and Professor Tze-Leung Lai.

Information: Professor W.K. Li <hrntlwk@hku.hk> or visit website at <<http://www.hku.hk/statistics/ICSA2001/>>

Clunies Ross National Science & Technology Award 2002

Nominations are now open for the Clunies Ross National Science & Technology Award 2002. The closing date for nominations is 20 July 2001.

Now in their tenth year these Awards recognise and honour people who have made important contributions to science and its application for the economic, social or environmental benefit of Australia.

The Award aims to increase our community's knowledge and awareness of the achievements of Award recipients and their contribution to Australia.

Nomination forms are circulated nationally and are available on request by phoning the Ian Clunies Ross Memorial Foundation on (03) 9854 6266 or www.cluniesross.org.au.

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