

ANNUAL CONFERENCE NEW ZEALAND STATISTICAL ASSOCIATION

17-19 August 1989

University of Auckland

The conference will be held in the Conference Centre at the University of Auckland, in central Auckland.

The conference will begin with a mixer on the evening of Wednesday August 16. There will be a full program of invited and contributed papers and the conference dinner will be on Thursday evening. There will also be a satellite program on medical statistics.

Hostel accommodation will be available in International House, five minutes from the campus. Motel accommodation can also be arranged.

Support your conference and meet your fellow statisticians.

Incoming Editors

NEW EDITORS ARE APPROACHING! From the next issue, Peter Danaher and Harold Henderson will jointly edit the Newsletter. Their e-mail addresses and telephone numbers are

Peter: P.Danaher@Waikato.ac.nz and (071)62-889, ext.8244

Harold: H.Henderson@Waikato.ac.nz and (071)62-839



Harold Henderson

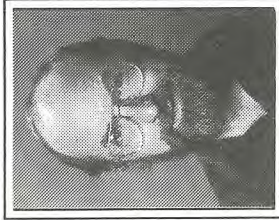


Peter Danaher

In this issue:

- Radial trials
- Upcoming conferences in NZ and Oz
- What Statisticians do
- News of members, conferences, etc.

PRESIDENT'S COLUMN



I have just returned from the first two days of the Fourth International Meet on Statistical Climatology, the first of a series of international conferences in which the NZSA will be involved over the next few years. The meeting was a big success (in spite of some fall off in numbers after recent airline mishaps) and John Revfeim and his fellow organisers did a wonderful job. The statistical problems involved in measuring and predicting climatic change are extremely difficult but are obviously of vital importance to the whole world. There was a feeling among some of the climatologists at the meeting that many statisticians were too conventional and inflexible in their thinking to provide the help that they should.

There has been wide media interest on a number of other issues with important statistical aspects recently. Some of the discussion of the Cartwright Report and other aspects of medical ethics have focused on issues that are almost purely statistical but with very little input from professional statisticians. Perhaps the NZSA should be a little more aggressive here. Problems in the allocation of marine resources are also under intense scrutiny these days and I have written to the Minister on the Association's behalf expressing our concern about the abolition of the Fisheries Statistics Unit and the potential effect on data quality; Mr Moyle has assured us that the Ministry is confident that the quality of data collected will be improved under the new system but we are still concerned about the lack of professional statistical input. The Executive has been using the Statistics Department's telephone conference facility to hold its recent meetings. This has proved to be reasonably successful and does some way towards overcoming the drawbacks of our geographic dispersion. We are very grateful to the Statistics Department for allowing us to use the facility.

Finally, this is Dick Brook's last newsletter. Dick has done a wonderful job of producing a lively and informative magazine (often under great difficulties). We thank him for all his work and wish his successors well.

Alistair Scott

Prince and Princess of Wales

Mick Roberts at Wallaceville has obtained a Prince and Princess of Wales Science Award and will be visiting Britain and the USA for 2 months from March, discussing parasite modelling with a variety of world experts. Congratulations Mick!

Planting Trees in Circles

Scientists often feel that they are going around in circles, but few more than Forest Research Institute scientist Dr Bob Tennent. Dr Tennent carries out tree growth trials for the Ministry of Forestry, trying to find the best number of seedlings to plant in each hectare of a forest. Too many seedlings leads to skinny trees, while too few can waste valuable forest space.

The usual way to find the correct number of seedlings is to plant small blocks, in a spacing trial. Spacing trials can easily become very large, and may end up too big to be useful. "The problem is that the soil can change from one end of a large trial to the other end", said Dr Tennent. "We have to find other ways to test the trees growth."

So Dr Tennent turned to cabbages. An Oxford mathematician Dr John Nelder had designed a trial for cabbages, where the same problem occurs. "It's the same for vegetables; how far apart are the rows, and how far apart are the seeds in the rows?", said Dr Tennent.

The answer is to plant the seedlings in circles on spokes, with the distance between each circle increasing at about the same rate as the gap between trees on the spokes. "This gives us a nice compact experiment, with any changes in soil balanced out."

Dr Tennent said that the only problem is staying oriented when measuring the trial. "It's very easy to become disoriented, walking around in circles. Especially when the trees become tall enough to cut out the light."

So visitors to Rotorua who fly over the Forest Research Institute can stop wondering what the strange circles are. It is just Dr Tennent trying to solve one of New Zealand's forestry problems, by going around in circles.

(Supplied by Ian Andrew, FRI, Rotorua)

STATISTICIAN

There is a vacancy in the Applied Statistics Group of the MAF, in Wellington, for a consultant mathematician/statistician. The work is varied but relates mainly to the field of Quality Assurance. The appointee will use a variety of statistical techniques and computer software to help investigate problems and suggest strategies for their control. Applicants should have a degree in mathematics with a major statistical component. The ability to communicate clearly with staff in other disciplines and with non-scientists is essential.

Please make enquiries to:

Elizabeth Viggers, Applied Statistics Group
Ministry of Agriculture and Fisheries, Wellington

Time for a change

In March 1984, John Reynolds introduced a newsletter to NZSA members. It was so well received that John was chained to his desk for the next three years until April 1987 and over this time he produced a total of 14 Newsletters. From August 1987 until this current issue, a total of 6, I have sat in the hot seat but I feel that it is time for a change. Obviously, we need the drive and enthusiasm of young members to take over. Where should we look for such talent? Why not Hamilton? Harold Henderson and Peter Danaher are sure to make a good team and I, for one, look forward eagerly to the style they develop over the next 14 Newsletters (or maybe even 28).

Alas, I did not reach my goal of enticing most of the executive and subcommittee members to reveal all about themselves but I am grateful to those who did so, including Sharleen Forbes in this issue. It is amazing what some people fit into a career! Thanks

to Lyn Bacica for sharing the activities she carries out as a statistician. Also, thanks to all you responsible people who answered the frantic call for copy.

Finally, I hope that the Newsletter will reach out to ever widening circles of people. I cannot express this better than the following quote from a mythical book by the late Sir Maurice G. Kendall and Dr Alan Stuart in their 3 volume text. May none of our friends be embarrassed, like Lamia, that we are statisticians nor the general public as confused as Lady Nuttal. Statisticians do indeed "enter into normal social relationships" and there is a "surprising depth of emotional possibility ... below ... (their) numerical veneer".

All the best

Dick Brook
Departing Editor

The Undoing of Lamia Gurdleneck

"You haven't told me yet", said Lady Nuttal, "what it is your fiance does for a living."

"He's a statistician" replied Lamia, with an annoying sense of being on the defensive.

Lady Nuttal was obviously taken aback. It had not occurred to her that statisticians entered into normal social relationships. The species she would have surmised, was perpetuated in some collateral manner, like mules.

"But Aunt Sara, it's a very interesting profession", said Lamia warmly.

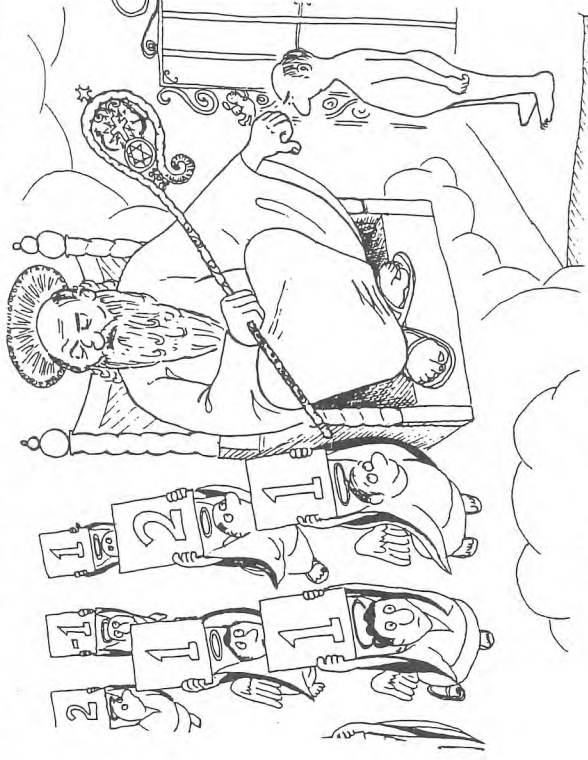
"I don't doubt it" said her aunt, who obviously doubted it very much. "To express anything important in mere figures is so plainly impossible that there must be endless scope for well-paid advice on how to do it. But don't you think that life with a statistician would be rather, shall we say, humdrum?"

Lamia was silent. She felt reluctant to discuss the surprising depth of emotional possibility which she had discovered below Edward's numerical veneer.

"It's not the figures themselves," she said finally, "it's what you do with them that matters."

K.A.C. MANDERVILLE, *The Undoing of Lamia Gurdleneck*

Peter Thomson noted some time ago that anagrams of the two authors are sprinkled through this delightful "nonsense".



The departing editor awaiting judgement.

WAIKATO

We have now been joined by Professor J.A. (Nye) John. Nye has a new kind of position for this University. He is a Professorial Fellow working in two Departments - Mathematics and Statistics, and Management. Nye has established a Unit for Quality and Productivity Improvement within the Waikato Centre for Applied Statistics which will be the "banner" for the continuing consulting work outside the University which is also part of his job.

Nye and Ray Littler have teamed up to teach the second year Statistical Methods course which is taking on more of an "industrial statistics" flavour.

From my window in my prefab I can see the long-awaited "Building G" rising up to take on reality. The building will house Mathematics and Statistics, Computer Science and Computer Services. August is being spoken of as the expected completion date. I dare not describe all that we hope for in connection with the new building, but if and when our dreams are realised I will certainly compose a suitably gloating report.

The Department has recently been joined by Dr Hamish Spencer who, although not a statistician, is somewhat of a kindred spirit. Hamish has recently completed a Ph.D in Mathematical Biology under Lewontin at Harvard and is interested in probabilistic models of evolutionary processes. We are glad to have him.

Murray Jorgensen

and

Our latest visitor has been Don Lewis of Unitech, Lae, Papua New Guinea. Don enjoyed brushing up on biometrical topics and testing our practical orientation with such challenges as advice on how to take a random sample of crocodiles. However, on the inevitable canoe trip down the mighty Waikato, neither he nor Nye managed to flush any crocs from the Hamilton river bank.

Plans are under way for a number of happenings in 1989, with the strong chance of an experimental design feast being organised around the time of MAFSTAT89, probably in Spring.

Ray Littler

MATH STATS

Debra Taylor and Karen Wong who finished Honours degrees in Statistics at Victoria joined the Branch at the beginning of the year.

Dennis Trewin from the Australian Bureau of Statistics visited the Department. We organised a local meeting of Wellington member of the NZSA, chaired

by Mike Doherty at which Dennis gave a talk on 'The Future for Statisticians: an Australian Viewpoint'. There was a large attendance from members, including many retired members. The feedback suggests that it was a lively talk and discussion helped by the refreshments that were supplied. It has been suggested that this was the inaugural meeting of the Wellington Local Group: but which series!

Alistair Gray will be spending six months at the Institute of Statistics and Operations Research Institute at VUW, working with Dr Peter Thomson on robust seasonal adjustment.

Alistair Gray Department of Statistics

AUCKLAND UNIVERSITY

News is rather scanty this time since (like many other groups) we have been overwhelmed by the unexpected increase in student numbers, up 40% in our case. We are fortunate that Jocelyn Dale, Peter Mullins, Linda Nicholls and Chris Triggs (it sounds like a roll call of NZSA office holders) have all pitched in to help with the teaching and we are very grateful to them all.

Comings and Goings: Chris Wild left in January to spend 6 months leave at the University of Waterloo. Cathy Macken made a brief return to New Mexico over Easter to take part in a workshop on Applied Molecular Evolution and the Maturation of the Immune Response. Tom Shively, from the University of Texas, will be visiting Craig Ansley during next term and teaching a Master's course on Time Series to Maths/Stats students.

Alistair Scott

CANTERBURY UNIVERSITY

Easaw Chako is visiting Singapore for the year. Graham Wood will be on study leave from May 1989. Graham and co-author, Dave Saville, have just finished writing a book titled, "Statistical Methods: the Geometric approach" which will be the text for Stage 2 Applied Statistics. Murray Smith will be visiting Purdue University on study leave from August 1989. Tony Davidson, on leave from Shirley Boys' High, is a Teaching Fellow at Canterbury and is teaching Stage 1 Statistics. Frank Lad is offering a course in Operational Subjective Probability at Stage 2. The course is based on a text he has just finished writing.

John Deely

Yes, John, you do get the prize for being easily the first respondent to this issue of the Newsletter. Would you be satisfied with an operationalized subjective chocolate fish? Ed.

MASSEY

At Massey we are entering the marketing era by launching the Quantitative Problem Solving Consultancy. We have been fortunate in securing support from the Fullbright Program, which is sponsoring a three month visit by Professor Stavros Busenbourg. He will be helping us establish the consultancy, drawing on his experience at a similar consultancy at Claremont. All we now need is rich clients with quantitative problems.

In a more modest way the statisticians now provide a statistical advisory service within the University. Data collected from this service suggests that three quarters of graduate research projects at Massey are based on inefficient (or just plain wrong) data collection.

In January we welcomed Pengfei Yang, from North-ern Jiatong University, Beijing. Yang will be undertaking a PhD on reliability systems, working with Chin Diew Lai.

Greg Arnold

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## MAF

Ken Dodds, a statistician at Invermay, is visiting France and the USA at the moment. He left NZ on 6 February and is attending a language school at the moment. In April Ken will be working at the Stration D'Amelioration Genetique Des Animaux in Toulouse. He will be working with Dr Jean Michel Elsen, looking for families of sheep with special attributes. In September Ken will visit Dr Bruce Weir at North Carolina State University and be concerned about the statistics of finding genetic markers.

### Peter Johnstone

## APPLIED STATISTICS GROUP, MAF

The main piece of news from MAF Wellington is that Roger Kisling went to Harare, Zimbabwe for three years at Christmas. His wife, Coyla, works in the Ministry of Foreign Affairs. Liz Viggers is due to retire in August which will leave four of us. We are currently trying to get a new staff member, though unsuccessfully at this stage.

*We're involved in all manner of schemes,  
meat and fruit, surveys, milking machines,  
This wide interest  
Adds much to our zest  
Come and join us - fulfill your dreams*  
Liz Viggers

See the advertisement elsewhere.

### David Harte

## OVERSEAS TRAVEL REPORT

### Study Award to AT & T Bell Laboratories



The original purpose of the visit was to undertake research related to the development and enhancement of the S statistical software package at AT&T Bell Laboratories in Murray Hill, New Jersey, USA. A secondary purpose was to observe and discuss first-hand the latest developments in the Unix and S areas, to formulate implications for our own S and Unix planning. A side trip was also planned for visiting the Olivetti organisation in Milan, Italy, on the way back from the United States. This was to visit the headquarters of the company supplying the 3B2 computing equipment for the AMD S and Unix project, to discuss the future of the 3B2 equipment range, to discuss a European research network supported by the Company, and to pursue marketing and customer support for our S binary product in Europe.

The visit to Bell Laboratories was very successful in that I had the opportunity to learn first-hand how to use the new version of the S statistical software, and then to make some contribution with the authors. The number of personal contacts made is also invaluable to future associations with the group of research statisticians with whom I was working. The visit also provided an opportunity to attend the UniForum/DC conference in Washington DC, which provided an insight into how such conferences are run in the US. The associated exhibition provided an opportunity to catch up on overseas developments in the Unix marketplace. Unfortunately the visit to the Olivetti organisation in Italy was not such a complete success. This was mainly because Olivetti reduced its support for the European academic network during the time I was overseas. This was, I suspect, a policy decision prompted by the departure of one of the key personnel who had been involved with the project. Nevertheless the Italy trip as a whole was successful in that I did make personal contact with our customer in that country, the University of Padua.

As a result of this trip, I feel that the Applied Mathematics Division now has a 'fingering presence' within the statistical research group at Bell Laboratories. Certainly I feel more inclined to make contact with the researchers there, and to encourage others to also make such contacts. The help given me by the personnel there (in particular the Department Head) in setting up my visit, complete with partial funding from A&T, bodes well for the viability of future visits to the Bell Laboratories by other DSIR scientists.

Ray Brownrigg  
Applied Maths Division







# CONFERENCES ON THE HORIZON

## THE STATISTICAL SOCIETY OF AUSTRALIA

STATCOMP 89

South Australian Institute of Technology  
Adelaide, South Australia

6th - 7th July 1989

STATCOMP 89 will involve a programme centred on topics in the area of Statistical Computing and Survey and Management with several sessions set aside for contributed papers. The following major themes have been selected for the conference:

- \* Expert systems
- \* Methodology for simulation studies
- \* Computer applications in survey operations and analysis

Contributed papers in these areas are especially welcome.

Keynote speakers include:

*Dr Daryl Pregibon*, AT&T Bell Laboratories  
*Professor Peter Diggle*, The University of Lancaster

*Mr Len Cook*, Deputy Government Statistician,  
Department of Statistics, New Zealand.

Book displays, demonstrations of computer software and hardware and informal gatherings will add to the opportunities afforded by STATCOMP 89.

In addition, the Biometric Society will run a one day meeting on the 5th of July 1989 that will include a half-day session on Nearest-Neighbour methods.

### SUBMISSION OF PAPERS

Papers on any aspect of Statistical Computing may be submitted for a 30 minute presentation, however, preference will be given to papers relating the themes of the conference. Poster presentations will also be accepted.

Abstracts for talks and posters will need to be submitted before 5 May 1989.

### REGISTRATION

It is envisaged that the registration fee will be about \$125 (\$100 for members). A circular containing a registration form will be sent out in mid-April.

### ENQUIRIES

Comments and queries should be addressed to:

Mr Bob Hall  
South Australian Institute of Technology  
North Terrace  
ADELAIDE SA 5000

## DATA ANALYSIS WORKSHOP

A Workshop Series designed for those who are interested in the analysis of complex data sets of fundamental practical importance is being organised under the auspices of the Consortium for Research in Computer Intensive Statistical Methods. Each workshop will concentrate on a single theme chosen for its relevance and broad applicability, and will establish the current "state of the art" in its respective field.

The first Workshop will be held in September 1989 at the Australian National University and its theme will be the formulation, fitting and statistical analysis of **linear simultaneous equation models**. These models are used in Econometrics, Marketing, Quality Control, Education, Psychometrics, Physical and Chemical Sciences, Biological and Medical Sciences, Statistical Science, Behavioural Science, Social Science and Political Science. It is hoped to attract data analysts from all these disciplines. Linear simulations equation models have many alternative names, including covariance structure models, latent variable models and LISREL models. Many users may not be aware of the literature under these different titles. It is hoped to rectify this situation.

Professor Brian Everitt, author of the monograph "*An Introduction to Latent Variable Models*" (Chapman and Hall, 1984), will be the Workshop's keynote speaker. The Workshop will confront the methodological and practical problems of linear simultaneous equation models with a novel format designed to have maximum impact. Two complementary data sets (either real or simulated) that highlight the fundamental methodological problems will be distributed to potential participants in January. Eligibility for Workshop participation will be determined by researchers presenting either an analysis of (part of) the data, or a theoretical contribution relevant to the Workshop's theme, one month prior to the Workshop. These contributions will be circulated to participants before the Workshop. Those who have contributed data are also invited to attend. The greatest value of the Workshop will be the Discussion Sessions. Publication of the final proceedings is being planned.

The Workshop coordinator, Sue Wilson, is currently organising data sets. If you have any suggestions or ideas please contact Sue on 062-494460, or at the address below.

Are you interested in participating in the workshop? If so, contact Sue Wilson for information on data distribution and Workshop contributions.

Dr Sue Wilson  
DAW Co-ordinator  
Department of Statistics, IAS  
ANU, GPO Box 4, Canberra, ACT 2601



## Statistical Bravura in Schools

I'm interested in David Harte's reporting of John Waller's Science Fairs observations - 3rd to 5th formers show more 'free thinking' - my experience too.

Perhaps we need not probe too deeply in what might be going wrong with statistics curricula or teaching round about forms 5 and 6 say.

It's puberty.

As John will know, I've had quite a handful of talented teenagers move through my blended family. Each one at 12 and 13 has been 'the sky's the limit' in their own specialisation, and by 15 and 16 daren't say boo to a goose for fear of getting the raspberry from their mates, defending grimly on all fronts. They seem to recover around 17-18. Perhaps we don't get too much out of the 7th formers because they deem themselves elder statepersons or some such.

**Solution.** Keep them at school until form 8; or put more hormones on their Weetbix to get them out the far end quicker. I did teach some very outgoing seventh formers in Africa where as we all know, things happen sooner. It was OK to be grown up and still at school.

Do we have the tall poppy and the faded poppy?

**Chris Dyson  
MAF Tech**

## Degrees of Freedom

The degrees of freedom of a statistic is one of those ideas which are as clear as daylight to statisticians but as murky as the driven slush to the patient hordes of students in introductory courses (and not so introductory courses). Of course, we can see connections between sample sizes and restrictions, ranks of matrices of quadratic forms, a basis for a vector space and other esoteric ideas. Most students accept degrees of freedom as a strange dogma to be swallowed but not to be chewed.

To try to clarify this concept, I have taken to using the illustration of articles which appear in newspapers. Suppose that the same story appears in four papers. Because of the tangled web of ownership of these papers, it could well be the case that only three reporters were present at the event in question while the fourth reporter simply plagiarised the ideas from one or more of the other papers.

The comparisons with degrees of freedom and newspaper stories are many. It may not be clear at first that there is a connection between the stories as they appear distinct on the surface. It is not difficult to imagine that only three, or two or only one of the reporters were actually present at the event described so that the number of independent accounts, which could be considered as degrees of freedom, may be three, two or more. Furthermore, with three independent accounts, the fourth may be a rehash of one of the other articles or a rehash of two or three of them.

All that remains to do is to talk very quickly about deviations adding to zero and so on before the gathered throng is smitten with the disease of glazed eyes. Oh well, it's worth a try!

**Dick Brook**

## 10TH AUSTRALIAN STATISTICAL CONFERENCE 2 - 6 JULY 1990

The 10th Australian Statistical Conference will be held in Sydney, at the University of New South Wales, from July 2 to July 6, 1990. This conference will also constitute the 2nd Pacific Statistical Congress, and will occur in the year of the centenary of the birth of Sir Ronald Fisher.

The Programme Committee for the conference has already commenced the setting-up of the conference programme, having solicited suggestions from Branch Councils and from the Chairs of the Society's sections. At this stage, three topics have been selected as being major areas of emphasis:

- \* Quality
- \* Computer intensive methods in statistics
- \* Analysis of dependent data.

Other subject areas will be selected as special topics for the conference. The Programme Committee seeks suggestions from the members of the Society about subject areas that should receive special attention; suggestions with a bearing on the Fisher centenary or on aspects that should be addressed in a Pacific Statistical Congress would be particularly welcome. Suggestions of suitable invited speakers would also be welcomed.

**This is your chance to make a positive contribution to the conference programme.**

Please direct your suggestions, before January 16, 1989, to the Chairman of the Programme committee, Dr Doug Shar, SIROMATH Pty Ltd, Level 5, 156 Pacific Highway, St Leonards, NSW 2065.



## EDUCATION SUBCOMMITTEE NEWS

We have just published the 'Databundle', a collection of databases collated and prepared by Mike Camden of Wellington Polytechnic (see advertisement elsewhere). This, together with John Rayner's 'Projects in Statistics and Mathematics', should help fill the needs of seventh form Mathematics with Statistics teachers for resources. The publication of both these items has in part been made possible by a grant from Professor Jim Campbell for which we are very grateful.

Ongoing communication is maintained with AAVA and the Department of Education on curriculum issues.

We are currently working towards this year's round of Science Fairs. Poster competitions will be held at two of these as a trial for what is hoped to be nation-wide poster competitions in 1990.

### What Should We Teach Them?

The Education Subcommittee is hoping to draw up some guidelines for Statistics education in New Zealand and would appreciate members' thoughts on what should be taught in the statistics area at the following levels:

- at primary school (non-maths teachers)
- up to form 4 (maths is compulsory)
- in forms 5 to 7 for virtually all students (maths is not compulsory but most still do some mathematics)
- at tertiary institutions.

### Statistics and Mathematics Education Research in New Zealand:

We have been asked to compile a list of current research in this area, at primary, secondary or tertiary levels.

### Ideas Needed:

Several teachers have approached us asking for ideas for research that they could undertake in their classrooms or schools.

### Please send comments and suggestions for the above to:

Education Sub-Committee,  
P.O. Box 1731  
WELLINGTON

**Sharleen D. Forbes**

**TOM HASSARD**, Director of the Biostatistics Unit at the University of Manitoba has received the T Hale Ham Award of the Association of Americal Medical Colleges as outstanding new researcher in medical education, 1988.  
*Tom was a senior lecturer at Massey before heading West. Ed.*

## EXECUTIVE NEWS Department of Statistics

Since I'm the corporate member the most important task for the coming months is to develop a strategy for encouraging more Corporate sponsorship. The ideas are at this stage very tentative, but the Executive is keen to see more Corporate sponsorship for NZSA activities like The Statistician and the Newsletter, Science Fairs, etc.

The second task I have is to expand the work started by David Harte in widening our contacts with Pacific Rim statistical societies.

**Alistair Gray**  
Department of Statistics

## HONESTY, NOT EXPEDIENCE

*from RSS, News and Notes, March 1989*

Channel four's finger pointed firmly at the government. Even though the people voicing the gravest concern about the mishandling, misrepresentation, and even misinvention of government statistics were statisticians, the fact that a popular programme has been broadcast will have left a general sense that statisticians are aiding the misinformation campaign.

Some strong views were expressed: "There is wide concern over the way this government is handling the figures. It has become a very serious issue in this country and one which causes a lot of us to consider where it will end. It seems to bear the hallmark of a concerted policy to get the statistics they want."

"We are told that unemployment figures are expected to show another fall. The government claims success of its policies. We are told that the poor are better off and more is being spent on the National Health Service than ever before. Can we believe them?"

Population statistics are buried in masses of detail. Measures are changed (unemployment was cited). Definitions are changed (a new hospital carpark is described as a large hospital scheme). When 17,000 new hospital beds were announced, there had been no mention that for almost every new bed an old one had disappeared.

What is to be done? Our professionalism demands honesty. We must not doubt the honesty of our colleagues in the government statistical services, but the apparent villainy of politicians makes it seem as if statisticians are conspiring with them.

*How well is our Government handling the figures?  
Ed.*



## The Data Bundle

The Data Bundle is a collection of statistical data sets that has been prepared by Mike Camden for the Education Sub-Committee of the NZ Statistical Association (Inc).

The purpose of this resource is to provide sets of real data for students to use in statistical explorations and for projects. They are an ideal resource for Form 7 mathematics with Statistics students but would also be useful at other levels in the school.

The Data Bundle is available for \$7.50 (no GST) from the :

Educational Subcommittee  
NZ Statistical Association (Inc)  
PO Box 1931  
Wellington

If you would like a copy please fill in this form:

To: Educational Subcommittee  
NZ Statistical Association (Inc)  
PO Box 1931  
Wellington

From: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please supply \_\_\_\_\_ copies of **The Data Bundle** at a cost of \$7.50 each.

Order Number: \_\_\_\_\_ Signature: \_\_\_\_\_

Enclosed \$ \_\_\_\_\_

Special Instructions:

### NZSA PUBLICATIONS

#### SCHOOL PROJECTS IN MATHEMATICS AND STATISTICS by J.C.W. RAYNER, DEPARTMENT OF MATHEMATICS AND STATISTICS, UNIVERSITY OF OTAGO, DUNEDIN, NEW ZEALAND

Project writing is a valuable skill in itself, and now the project in the seventh form Mathematics with Statistics paper counts for 20% of the total assessment. How should students prepare and plan their projects? What makes a good project? How should the project be presented? Questions such as these are answered in this easily read comprehensive 30 page booklet. It also serves as a model that can be copied when it comes to writing up that important document.

In publishing this booklet, costs have been kept to a minimum. At \$1.50 each, it is cheaper to buy multiple copies from us, rather than buy one and (illegally) copy it. We suggest schools buy class sets, or that students be encouraged to buy their own copies. Just complete the order form below and send to:

NZSA Publications, Department of Mathematics and Statistics, University of Otago, PO Box 56, Dunedin.

Please supply ..... copies of School Projects in Mathematics and Statistics by J.C.W. Rayner, at a cost of \$1.50 each. Our cheque for \$..... is enclosed.

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Please note that no GST is payable on NZSA booklets.



# FOURTH INTERNATIONAL MEETING ON STATISTICAL CLIMATOLOGY

*held at the Quality Inn, Rotorua, 27-31 March 1989.*

To members of the Organizing Committee the 5-day event that was 4IMSC is still something of a blurr. The week was successfully launched on Easter Sunday with an evening 'ice-breaker' with liquid refreshments provided by NZSA and NZMet. Soc. Your President Alastair Scott was recognised as a joint host and mingled with the 100 or so participants and accompanying persons of whom more than 80 were from overseas.

The formal programme began on Monday with Alastair Scott in the Chair and the opening lead paper by David Vere-Jones titled 'Remaining unsettled? Some personal impressions of weather and climate statistics'. This paper was very kindly prepared at fairly short notice by David as a replacement for Professor Lev Gandin, ex-Geophysical Observatory, Leningrad, and now at the National Weather Center, Washington, who was prevented from flying to NZ due to high blood pressure. Perhaps it was just as well that the 4IMSC committee members had planned to travel from Wellington to Rotorua by road!

Other lead speakers were:-

- \* Bob Livezey: A critical review of two decades of teleconnection studies.
- \* Craig Ansley: Detecting shifts, trends and periodicities. (Session chaired by ex-President NZSA Peter Thomson)
- \* Phil Jones: Early instrumental climate data for the Southern Hemisphere.
- \* Klaus Fraedrich: Estimating dimension and predictability.
- \* Ross Leadbetter: Clustering of high values in climatological series.

Iterative programme adjustments is an accepted hazzard of international conferences and some unexpected as well as expected non-appearances were accommodated in the 8 half-day sessions.

The high calibre of NZ (or ex NZ) lead speakers was an eye-opener to some participants and their contributions generated considerable interest. Allan Murphy (Convener of IMSC Steering Committee from Univ Oregon, USA) was so impressed with Ross Leadbetter's talk that, on discovering that Ross was now domiciled at University of North Carolina, was

determined to get him involved with statistical climatology meetings in the US. On the other hand, later in the week Ross enquired which NZ University Allan was attached to! Which all goes to prove that statisticians are not biased by accents.

Apart from the formal programme the sequence of social events kept the 'jet-lagged' on their toes.

- \* Hangi and concert at THC International on Monday with Peter Whittle taking the formal Maori challenge and being called out-front by hostess Maureen Kingi (ex Miss NZ) to demonstrate the 'hongi'.
- \* 4IMSC dinner on Tuesday (described as a 'banquet' by one visitor from USA) with Peter Whittle (flown to NZ by courtesy of Canadian Airlines International) as after-dinner speaker. Peter had noted a distinction between physical and statistical mathematicians at AMD in the 'early days' with the former having a penchant for smoking!
- \* Half-day tour on Wednesday afternoon saw 71 persons boarding bus, van and car to take lunch and see boiling mud at Waitapu, with 61 going on to view the Huka Falls, thence to Taupo for an evening cruise and dinner on the Taupo Cat. It was probably inevitable for a climate conference that the only rain for the whole week should be on Wednesday afternoon!

- \* 13 persons took the post-4IMSC tour from Rotorua to Wellington per courtesy of Mt Cook Landlines with an overnight stop at the excellent facilities at Flock House (near bulls). After a farm tour on Saturday morning the party travelled to Wellington via Southward Museum and were billeted overnight by Met Service staff. The mixture of 2 each from China, FRG, Netherlands and USA and 1 each from Canada, India, Russia, Sweden and UK made a most interesting group.

Galaway (Ireland), Pune (India), Toronto (Canada) and Zurich (Switzerland) were bidding to host the next IMSC and after 3 Steering Committee meetings during the week a decision was made to hold 5IMSC at Toronto. The success of 4IMSC can be measured in a comment overheard from a USA participant to the Canadian representative that 'it was a hard act to follow'.

**John Revfeim**



# 1988 Biostatistics Meeting

In November 1987 Dr Sheila Gore, a visiting biostatistician from the U.K., put forward a proposal for a Biostatistical Working Party. Out of this we developed a local proposal and in March 1988 the Medical Research Council granted money for one meeting of biostatisticians. This meeting was held in conjunction with the New Zealand Statistical Association Conference at Massey University in August.

There are two consulting biostatisticians in Auckland, Wellington, Christchurch and Dunedin and one academic biostatistician everywhere except Christchurch. With one exception the consulting biostatisticians are funded by the Medical Research Council. Of the eleven biostatisticians nine were able to attend and two people who had worked previously as consulting biostatisticians came for some or all of the meeting. Thus the meeting provided a good opportunity for us to get to know each other both in the meeting sessions and over dinner.

The meeting itself consisted of two main sessions; one was a general discussion on biostatistics in New Zealand and the other dealt with power and sample size.

One important issue in the general discussion related to the boundaries of biostatistics and computing. Most biostatisticians felt that they spent too much time on low level computing assistance with data entry and data transfer which could be done adequately by a computing assistant. The only biostatisticians without this problem were those with an accessible computer assistant to whom they could transfer clients. Some biostatisticians reported considerable disruption of work from people dropping in without ap-

pointments; again this related mostly to computing problems rather than statistical problems and could be eased if more computing assistance were available. Work priorities and ways of dealing with excessive workload were discussed. Consulting biostatisticians were not sure whether, in funding them, the Medical Research Council had a clear list of priorities with MRC funded projects at the top or whether biostatisticians were employed to serve medical research in their areas, without any pre-specified rankings. Career pathways and means of assessment were also of concern.

The session on power and sample size determination was a useful sharing of current techniques. Everyone reported increased demand for this type of work stimulated by requirements from animal and human ethics committees, granting bodies and journals. There was some discussion of ways of educating researchers and ethics committees about sample size and power. Notes on the techniques talked about at the meeting have been collated and will serve as a useful compact reference source to articles, books and software available in New Zealand. Because the field is changing quickly we did not feel that it is worth bringing these notes up to publication standard for wide circulation but they will be made available to anyone who requests them by contacting the local biostatisticians.

We wish to thank the Medical Research Council for providing funding for this meeting and Dick Brook of Massey University for his role in making facilities available.

**Elizabeth Wells**



*Peter Whittle and friends at the Climatology Conference*



**ANNUAL CONFERENCE OF THE NEW ZEALAND  
STATISTICAL ASSOCIATION**

AUGUST 17-19 1989  
UNIVERSITY OF AUCKLAND

First Notice and Call for Papers

Papers are invited on all aspects of statistics. Each paper will be allocated about thirty minutes. Please submit abstracts before  
June 15 to:

Dr C M Triggs  
NZSA Conference Secretary, Applied Mathematics Division  
DSIR, Mt Albert Research Centre  
Private Bag, AUCKLAND  
(sramcmt@amv.dsir.govt.nz, or PSI%4600000001::sramcmt)

**REGISTRATION FORM**

SURNAME:

GIVEN NAME:

AFFILIATION:

POSTAL ADDRESS:

EMAIL ADDRESS:

TELEPHONE:

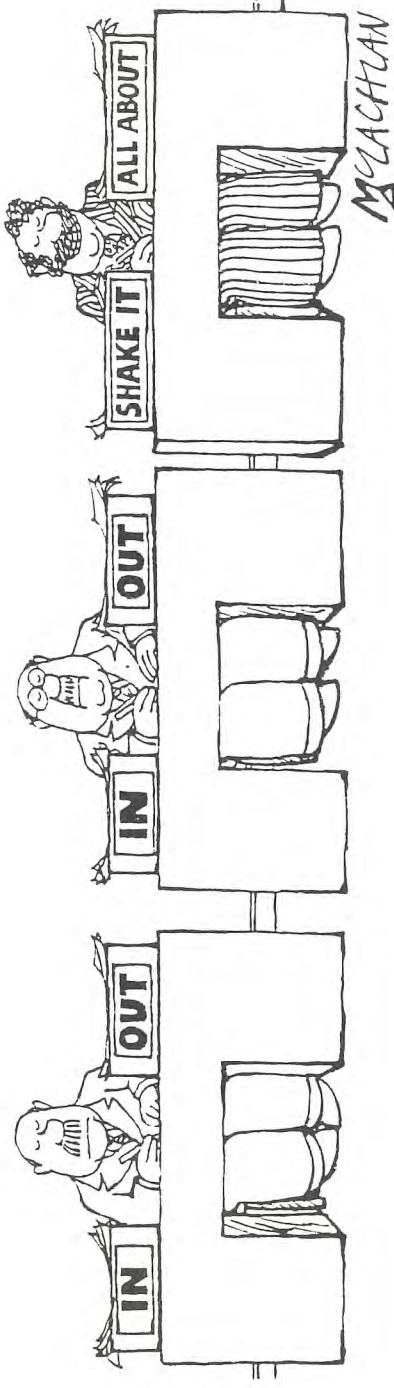
NAME TAG: Please indicate how you would like your name and affiliation to appear on your name tag:

| ITEM                                        | Costs | RATE               |
|---------------------------------------------|-------|--------------------|
| Registration Fee                            |       | \$45.00            |
| Conference Dinner                           |       | \$30.00            |
| Hall of Residence (Bed & Breakfast) per day |       | \$27.00 (plus GST) |

**Accommodation:**

Hostel-accommodation (bed and breakfast) required for each of the following nights:  
Wednesday 16      Thursday 17      Friday 18

CLOSING DATE FOR DEPOSIT FOR ACCOMMODATION: 17 JULY 1989







# ICOTS 3

## The Third International Conference on Teaching Statistics

19 - 24 August 1990

University of Otago, Dunedin  
NEW ZEALAND

Sponsored by the International Statistical Institute and the University of Otago

### Objectives

Key objectives include improving the quality of statistics instruction on a world-wide basis, fostering international co-operation among teachers of statistics and promoting the interchange of ideas about teaching materials, methods and content.

### Programme

The programme will include plenary, invited and contributed paper sessions, workshops, panel and poster sessions. Teaching from beginning school to college, polytechnic and university level will be included, as well as sessions on teaching statistics in government, business and industry. Opportunities will be provided to see and experiment with the latest in computer hardware and software.

### Sessions and Workshops

There will be approximately 8 invited paper sessions offered within each of the following streams:  
o *Teaching Probability and Statistics in Schools*  
o *Teaching Probability and Statistics in Universities and Technical Institutes*  
o *Statistical Training Outside the Teaching Institutions*: General Issues  
There will be approximately 8 workshops on topics ranging from using calculators and computers in the classroom through to seasonal adjustment methods for economic time series.

### Call for Contributed Papers

You are invited to submit a contributed paper, workshop, poster or other exhibit for presentation at ICOTS 3. Where appropriate, contributed papers should link to a particular session. Further information including lists of the sessions and addresses of session organisers are available from your *ISI National Correspondent* or from the Secretary of the ICOTS 3 Local Organising Committee. (Their addresses are given below.)

### Plenary Speakers

Plenary speakers confirmed to date are:

- o *Denis Lindley* *Inference in Statistics*
- o *Jim Landwehr* *Statistical Graphics*
- o *Niels Becker* *Disease and Statistics*
- o *Peter Holmes* *Success and Failure in Teaching Statistics*
- o *Geoff Jowett* *Expanding Statistical Education*
- o *M.A. Devaki-Jain* *Women and Statistics*

### Tours

Pre and Post Conference tours to the lakes, mountains and farmlands of the South Island will be advised in the second circular.

## Information about ICOTS 3 and Second Announcement

For further information, and to ensure that you are put on the list for the second announcement about ICOTS 3, please complete this form and return it to your ISI National Correspondent, or the Secretary of the ICOTS 3 Local Organising Committee.

Name: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

I would be interested in presenting a:   
paper  workshop  poster or exhibit

The Secretary  
ICOTS 3 Local Organising Committee  
University of Otago, P.O. Box 56  
Dunedin,  
NEW ZEALAND



## WHAT STATISTICIANS DO



For the past two years I've been what is rather loosely described as a "Computer Consultant" for the Social Policy Unit of the Treasury. The basis for most of the work I'm involved in is the Household, Expenditure and Income Survey (HEIS) run by the Department of Statistics. My job is to maintain the database and related programs, and to use them to provide some quantification of economic theories and fiscal strategies. For example, what would be the cost of various alternatives to National Superannuation? What would be the distributional effects (and the net cost or saving) of a proposed change to social welfare benefits of the personal tax rates? What would it cost to compensate particular groups (eg families with dependent children) through various mechanisms?

With the contortions that we put the base data through to provide answers to most queries, sampling error estimation and statistical significance have little relevance. An understanding of the limitations of the HEIS data, particularly when used for purposes it was never designed for, is more important. Implicit assumptions, non-sampling error and bias are our main concerns, but of course are rarely quantifiable. Usually we settle for an outline of known limitations and, if possible, their directional effect on results. Since targetting of benefits has become more prevalent, attention has centred on some groups which are not well represented in the HEIS. Post-stratification has been used to try to correct for

some of this bias, and also to allow projections to future years where the population composition will be quite different to that of the sample. This has been of particular importance in relation to estimating the future costs of the present National Superannuation scheme.

So, how useful is my formal statistics background in my day-to-day work? Several courses stand out - Sample Surveys, Multivariate Analysis, and Models for Non-normal Data. One deficiency was non-parametric statistics, and another was how to cope with large samples! (Everything is statistically significant.) A larger computing component to the courses would have been a bonus, but things have no doubt improved over the last decade ...

Lastly, Dick Brook suggested I write a few words on trying to cope with a young baby and still work. Full marks must be given to the relevant managers at Treasury who have made it much easier than it might otherwise have been. My contract is a very flexible part-time one, and my work is relatively independent; provision was made for the baby to be brought in to be fed in the early months and no-one complained since about bottles of expressed breast milk between the Trim and Homogenised. Childcare has been the major problem - there aren't too many people wanting to be a long-term part-time nanny. There are times when I feel I'm trying to juggle too many conflicting responsibilities, but this is not always due to paid work commitments. I enjoy my work, Sonja is surviving despite my absences, but my husband has had to resume ironing his own shirts. Isn't life tough?

Lyn Bacica



## PROFILE: SHARLEEN D. FORBES

### *Convenor: Education Subcommittee*

Yet another statistician whose original interest was in another field - operations research. I was employed at Victoria University over an 11 year period in various lecturing capacities; teaching statistics, operations research and implementing 'basic skills' assistance for students. Following a year secondary school teaching in a private girl's school I took up my current position as a consultant statistician for the Ministry of Agriculture and Fisheries at Wallaceville. I maintain an active interest in mathematics education and am a member of the Equity in Mathematics Education (EIME) group which has recently been awarded a grant from the Department of Education to look at gender and ethnic differences in mathematics performance. I have a large extended family, 7 children and step-children and 4 grandchildren, and live in a small farmlet in South Wairarapa surrounded by a variety of slightly crazy animals.

Sharleen D. Forbes

