

# newsletter

## ICOTS3 1990

The Third International Conference on Teaching Statistics will be held at Otago University on 19-24 August, with the overall theme *Statistics for all*.

The programme includes six plenary sessions, streams devoted to teaching at the school, tertiary and general community levels, workshops, poster sessions and the NZSA conference.

Plenary speakers will be Geoff Jowett, who pioneered the introduction of statistics into N.Z. schools ("Expanding statistical education from a N.Z. perspective"); Devaki Jain, a well known activist for women's rights in India ("Women's lives and statistical methods"); Dennis Lindley ("Statistical inference"); Neils Becker ("Statistics in medicine"); Anne Hawkins ("Successes and failures in statistical education"); and Jim Landwehr ("Statistical graphics"). (A full list of talks appeared in the last issue of the *Newsletter*).

Other key components of the conference will be sessions on the use of video and audio tapes for teaching and a session on distance teaching, with contributions from the staff of the Open University. The conference theme will be emphasised with a session run by David Moore on public awareness of statistics.

If you wish to contribute a paper please inform the ICOTS3 Secretary, Department of Mathematics and Statistics, University of Otago, Box 56, Dunedin, N.Z. by **31 March**.

The registration fee is \$250 up to April 1 and \$300 thereafter. Students receive a 50% discount. A registration form is enclosed in this issue of the *Newsletter*. Further details on excursions, accommodation, travel and the conference dinner are available from the Conference Secretary.

## NZ STATISTICAL ASSOCIATION ANNUAL CONFERENCE 1990

The NZSA Conference will be held at Otago University concurrently with ICOTS3 on Wednesday 22nd August. It is planned to have two invited talks in the morning (Professor Toby Lewis has agreed to give one of these), followed by a programme of contributed papers in the afternoon, with the conference dinner in the evening. Anyone wishing to present a contributed talk should send a title and abstract to Malcolm Faddy, Department of Mathematics and Statistics, University of Otago, Box 56, Dunedin, N.Z. by the end of June please.

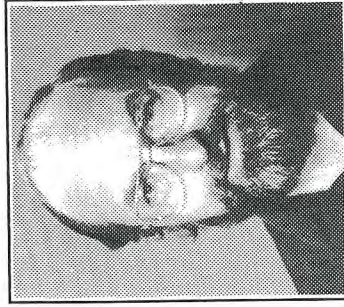
Administration will be shared with ICOTS3 and participants wishing to attend only the NZSA conference are asked to use the ICOTS3 registration form, filling in Section C (the form is in this issue) and returning it by the end of July 1990. Note that hotel/motel accommodation cannot be guaranteed if registration forms are received after the end of March. College accommodation should be available up to the time of the conference.

### In this issue

- pp. 2-3 Pacific Statistics Conference
- p. 4 An interview with Jeff Hunter
- p. 8 Cathy Macken writes on statistical modelling
- pp. 10-12 Member's news



## President's Column



The good news for this issue is that we welcome Stan Roberts back to the Executive Committee after a gap of several years. Stan, who must be a contender for the title of the NZSA's longest-serving active member, has been co-opted to help with the administration portfolio and we are very grateful for his help. The bad news is the resignation of Jocelyn Dale as editor of the *NZ Statistician* and of John Rayner as convener of the Publications Committee. Both have done a superb job in these key roles and we are going to be hard pressed to find suitable replacements. We are looking for volunteers and would be very happy to have suggestions from members. At our last committee meeting, we discussed ways in which we could provide additional support, particularly to the new editor.

Finally, a reminder that this year's AGM will be held in conjunction with ICOTS in Dunedin in August. I look forward to seeing you all there.

Alastair Scott

---

## Applied Maths Division Restructuring

The DSIR is restructuring its 25 Divisions and Units into 9 or 10 Divisions of 250 staff each by July. This is a response to the need for a much improved management structure.

AMD, with 50 staff, is too small to remain a separate Division so will be amalgamated with other Divisions. Details should be announced by the end of April.

Robert Davies

## THE 1990 SOUTH PACIFIC STATISTICS CONFERENCE

Planning is at an advanced stage for the 10th Australian Statistical Conference/2nd Pacific Statistical Congress, to be held at the University of New South Wales from July 2-6, 1990. A Preliminary Registration Brochure is enclosed in this Newsletter and posters advertising the conference have been distributed throughout Australia and New Zealand, and to some other overseas sites. Early registration, and early notice of contributed papers, are always appreciated by organising committees.

Manoo Vagholkar, of the School of Mathematics, UNSW, is the Conference Secretary. The Local Arrangements Committee is under the chairmanship of Charles McGilchrist, also of the School of Mathematics, UNSW, and the Programme Committee is chaired by Doug Shaw, of the Sydney Office of the Division of Mathematics and Statistics, CSIRO.

The Programme Committee has been very gratified by the response to the invitations extended to overseas speakers. Every one of the speakers who were invited accepted! That we should get this kind of response, particularly when the International Biometric Conference in Budapest is on at the same time, is an indication of the high regard with which statistics in Australasia is held. The keynote speakers at the Conference are

George Box - *Quality*

Adrian Smith - *Analysis of Dependent Data*

Brad Efron - *Computer Intensive Statistical Methods*

Ron Brookmeyer - *Medical Statistics*

Hans Folmer - *Financial Mathematics*

In addition, there will be invited talks from:

Alistair Mees - *Chaotic Systems*

Alastair Scott (Who?) - *Ordinal Regression*

Other speakers may be extended invitations to



present papers.

Two major workshops have been arranged to overlap with the Conference:

A workshop on epidemic modelling with particular application to AIDS will occur on the weekend preceding the Conference; there will be a Conference session on the Monday of the Conference devoted to this topic. Keynote speakers for the workshop and the Conference session will be Ron Brookmeyer and Valerie Isham.

A workshop on statistical methods in image analysis will be held on the Friday of the Conference and on the Saturday following. Keynote speaker for this workshop will be Mike Titterton.

In addition to these workshops, it is planned that a workshop on industrial experimentation, led by George Box, will be held in Sydney. Further details will be provided as they become available.

As well as conference sessions based on the keynote speakers, and the Conference sessions which are part of the workshops, a number of other Conference sessions on topics of current interest are planned. Subjects proposed to date include the 1990's round of population censuses, robust methods and diagnostics, nonparametric smoothing, and election night forecasting. It is expected that the Society's special interest sessions will provide further conference sessions.

Contributed papers are, of course, very welcome by the Programme Committee. We would be particularly pleased to receive abstracts of contributed papers in the areas mentioned above as being the main focus of the Conference. The deadline was 28 February.

## Editorial

A new year has well and truly started and you can see from the news that the summer has been active and productive for NZSA members. The future looks to be busy too, with three important conferences on the horizon: the Pacific Stats Conference in Sydney; ICOTS3 in Dunedin and the Maths Colloquium in Auckland. Plans are well advanced for ICOTS3 and the programme looks exciting. As it is such a big conference the deadline for contributed papers is 31 March. Please book early to avoid disappointment. Sensibly, the annual NZSA meeting has been coupled with ICOTS so that more people can attend the AGM. But seriously folk, let's try to get to Otago for this major conference.

Peter Danaher and Harold Henderson

## Letter to the Editor

Tch-tch...the misconceptions some northern statisticians have about their physical environment! In the November *Newsletter* Chris Wild conjectured that Jeff Hunter might encounter 'greener pastures (more rain?)' in Palmerston North' (than Auckland).

Climate records show that Albert Park (as near to Auckland University as one can get climatically) had a mean annual rainfall of 1242 mm over the period 1962-82 compared with 993 mm when a climate station was operating at Massey. So Jeff, with Auckland's recent rainfall records, your Professorial migration will be to a drier climate but you might find life more of a breeze!

John Revfeim

## Rejoinder

Although (deficient?) rain gauges may argue to the contrary, there must be more rain in Palmerston North because it was the Waters of Massey that persuaded Jeff to go there.

Chris Wild



## A conversation between Peter Danaher and Jeffery Hunter in December 1989

---

PD: How did you get into statistics?

JH: I was going to major in physics but was disillusioned with the labs by the end of my first year (at Auckland University). I did well in pure and applied mathematics so I talked with Fred Chong and he suggested I do statistical maths. It was probably the most difficult unit of my whole degree!

PD: Who taught it?

JH: Merle Colebrook with George Seber (as a junior/lecturer) teaching probability and ANOVA.

PD: What about graduate study?

JH: In 1962 I was taught a masters course in probability theory by Cole Wilkins who concentrated on renewal theory and queueing theory. He introduced me to the work of W.L. Smith. I went to North Carolina in 1964 to work with Wally and did my PhD on semi-Markov processes. After completing my dissertation I stayed on as a research fellow for nine months.

PD: Like a post doc?

JH: Yes, I also worked part time at the Research Triangle Institute. At the end of 1968 I returned to Auckland as a lecturer and have been here ever since.

PD: What motivates your research?

JH: A lot of my mid-career research came out of the reading I did when preparing the material for my book on applied probability. The work I did on my PhD thesis tied in with the later work I did on generalised inverses. I had a successful period with Ralph Disney in 1980 that resulted in a series of papers.

A lot of my recent research has been on feedback queueing models and lately I've been looking at the computational aspects of Markov chains.

PD: Do you find your teaching load or lack of facilities impedes your research?

JH: No, I've been a satisfied academic as far as the provision of facilities is concerned.

PD: Do you feel there's still exciting frontier work to be done in your field?

JH: Oh sure. I've got a little notebook with quite a few problems that need to be tackled in it. Some of them are really beyond me and I'm getting to the stage where I need the support of others outside applied probability, particularly concerning the numerical aspects.

PD: Do you think there is too much pressure on N.Z. statisticians to be applied rather than theoretical?

JH: A lot of employment prospects for recent graduates have been in industry or the DSIR. There one is faced with practical problems. Universities have really been the place where theoretical research is possible and encouraged. I've really had no one dictate the type of research problems that I should work on. I never succumbed to the pressure to be practical. However, lately I've seen practical ramifications of applied probability, for example, in queueing networks and communication systems.

PD: Is it a lonely world for you, being an applied probabilist at Auckland and soon Massey?

JH: All my papers except one have been sole author papers. I've been content to do that but am getting to the stage now where I see so many things that I'd like to work on and would appreciate support to undertake.

N.Z. is too small to have strengths in all areas at each university. Personally, I would like to see a Centre for Applied Probability Research started at Massey.

PD: Since we can't offer strengths in all areas of statistics do you think it's a good idea to send students overseas, to say America, to do PhDs rather than stay here?

JH: I must admit that the American system does offer considerable flexibility and gives students a very wide background before they have to decide upon a research area.

The danger with staying here is that a student will do his/her undergraduate studies through to PhD all in the same institution. I'm not in favour of that scenario.

PD: How do you see the development of your discipline both locally and nationally?

JH: I'll put on my hat as Professor of Statistics at Massey for this one. I see Massey as offering both theoretical and practical courses in statistics and would like to see some strengthening in these offerings. We've got to work on the course structures, particularly the stage three theoretical courses.

I know there are students who complete first year service courses that are looking for opportunities in the statistics area and we have to provide them with suitable courses. This includes looking for ways to cater for students in



a variety of disciplines, business studies and social science, for instance.

One has to offer courses like Massey's Diploma in Applied Statistics and hope we attract students that don't have a strong maths background but do have an interest in using statistics in their careers.  
PD: Well Jeff, let's wrap things up there. Thanks very much.

---

### **Joint Statistical Meetings in Washington D.C.**

The American Statistical Association's sesquicentennial meeting in Washington D.C. August 6-10 drew the biggest crowd yet for a statistics meeting. I have been to every ASA annual meeting except one since 1975, and this certainly ranked among the best.

There are always eminent statisticians talking on topics of general interest at ASA meetings, but this year there seemed to be more of them, and more eminent. On Monday morning there was a panel discussion with Sir David Cox, W. Edwards Deming, Morris H. Hansen, C.R. Rao and John Tukey. On Wednesday, Sir David Cox gave the R.A. Fisher lecture on "Probability Models; Their Role in Statistical Analysis." The Wald lecture was presented by I.A. Ibragimov on "Some Problems of Nonparametric Estimation Theory." To mark the sesquicentennial, various sections of ASA organised special sessions around the theme of Past, Present and Future. We could listen to authoritative discussion on such topics as Women in Statistics, the Future of Statistical Computing, and Statistical Graphics: Whither and Whence.

My favourite parts of the formal program are always the invited paper sessions organised by the editors of the different ASA journals. These papers will shortly appear in the journals, and have been selected as the most suitable for presentation at the meeting from amongst the previ-

ous year's submissions. They are always interesting and polished, with good discussions. This year's crop lived up to expectations.

Many of the formal programme sessions were, of course, very specialised. I organised a Sunday session on Nonlinear and Non-Gaussian Dynamic Models, with invited speakers Peter Lewis, Robert Kohn, and Genshiro Jitagawa and discussant Bvis Abraham, but had to miss it because of my cheap ticket! Other sessions I was very interested in were on spline smoothing, financial statistics, time series, growth curves and computational methods. If there was nothing on you were interested in (unlikely!) or just needed a break, the book and software displays could easily soak up several hours. I ended up with ten new books and a copy of S-Plus.

The 1989 meeting will certainly be one that is remembered, and one that will be hard to repeat. This year the ASA meeting is in Anaheim, next to Disneyland - this would be the one to take the kids to.

Craig Ansley



---

### **Heavy Citation**

A paper written by Professor Brian Hayman, Foundation Professor of Maths & Stats at Massey, entitled "The Theory and Analysis Dialectic Crosses" in *Genetics*, 39, 789-809, 1954, has emerged as one of the most cited papers in its field according to the Science Citation Index.

Clearly, this piece of work has had considerable influence on other authors in this field. Well done Brian!



## International S Workshop

Following the Commonwealth Games in Auckland, Wellington hosted the First International S Workshop at Victoria University, February 6-10. The workshop was the brainchild of the AMD/ISOR S project, and its aim was to draw together people with expertise in the S language in an informal setting. Word has it that the idea germinated from an offhand remark by Ray Brownrigg when departing AT&T Bell Labs - would he say it again?!

With sponsorship from Olivetti NZ (Co) and SUN Microsystems NZ, Ltd, we were able to entice all three authors of the S language to attend: John Chambers, Rick Becker and Alan Wilks, all of AT&T Bell Labs. With this drawcard we attracted 45 participants from the United States, France, Japan, Australia and New Zealand.

Our first aim for the workshop was to provide a forum for S system support (hackers) to exchange ideas. Our second aim was to discuss the application and user support of S, bringing together people involved in writing software for S users. With this in mind, afternoons were devoted to parallel session workshops entitled "Internals" and "Applications". While at times the internals workshop hummed with the interchange of invaluable snippets that only hackers could want to know, important issues covering interfacing, graphics, porting and performance were discussed. The application sessions, oriented more towards the user community, provided a useful discussion of S function and documentation style, together with an exchange of application software. One interesting development for S is the feasibility of providing an interface from S to other statistical packages - imagine, SAS, GENSTAT and MATHEMATICA all within the same environment!

The informal spirit of the workshop meant for candid presentations of the authors' current views and plans for S. The keynote address from John Chambers outlined the history, development

and philosophy of S. From this followed discussions of future directions for S: the incorporation of a more object oriented style, a proposal for a new graphics paradigm, an extensive modelling library including generalised additive and linear models. Some of these presentations are well on their way to completion, while others are unabashedly 'vapourware'. Undoubtedly, though, the most valuable contribution from the authors was their willingness to participate and respond to suggestions, queries and (dare I say it) complaints.

Presentations of developments to S from outside Bell Labs illustrated the flexibility that the language has achieved. Exciting potential was shown for using the full power of UNIX to run processes concurrently with S. A 'Data-Viewer' graphics window, a facility for running parallel auditing, an environment for statistical inference demonstrated enhancements of the S environment.

Rave reviews of Wellington's weather and hospitality have followed from the four days of sunny, calm weather. The conference dinner, a barbeque at Orongorongo Lodge, was a blissfully calm, yea, veritably windless (*sic*) evening. Cloudless skies enabled us to point out the wonders of the Southern skies to our Northern hemisphere visitors. All participants safely departed the city without verification of the rumours circulating about the weather of the Capital. Our reputation rests, unsullied.

Deborah Donnell

---

### Massey

We are struggling like "...but Massey is different from Auckland." as Jeff Hunter becomes acclimatized. At least the weather has been unusually Aucklandish.

We welcome Alisin Lister as a part time tutor. She is a Massey graduate who has worked for both MAF and Lincoln.

Soon we will have a Sparc workstation and are looking forward to conference conversations on S and the frustrations of Unix! -Greg Arnold

## Industrial Problem Solving Workshop at Massey University

Programmes that foster the interaction between academic and industrial applied mathematics have blossomed in recent years. A programme of this type has recently been launched at Massey University, and it has had an auspicious start, partly because of the benefit available from experiences with previous efforts. Stavros Busenberg of the Claremont Mathematics Clinic helped with the initiation of the Massey programme. Graeme Wake heads the programme which has been named the "Quantitative Problem Solving consultancy" (QPSC) and involves staff from the Departments of Mathematics and Statistics, Production Technology, Management Systems and the Computing Centre of the University.

On August 14-15 1989, the Consultancy organised the first of what promises to be regular workshops, which brought together over forty people from universities, industry, and various government departments. The first day opened with a key-note talk by Stavros Busenberg describing various University-Industry collaborations in the United States as well as a synopsis of the aims of the consultancy and the workshop. A half-hour spirited discussion spilled over into the tea-break. This was followed by half hour presentations of a variety of projects that had been successfully completed at Massey and elsewhere in New Zealand. The presentations included Alex McNabb of Massey University describing a novel method of estimating the time for freezing irregularly shaped objects with applications to the food industry. Paul Austin presented a case study involving the use of modern control theory methods in optimizing a biotechnology production plant. Dick Brook described a decision-tree approach to identify those at risk from suicide, which uses the compute program CART. Three other case studies were presented, describing activities of the DSIR-AMD in Wellington, a vehicle scheduling prob-

lem, and the analysis of incidents of spontaneous ignition.

The second day involved three presentations by industrial and government personnel in the morning followed by a break-up of the participants into three groups which discussed intensely one of the problems. The attendance bell had to be rung repeatedly, and loudly, to get these groups to return to the other scheduled events. The afternoon session paralleled the morning with three more problems, presented and discussed. The day ended with brief presentations by each of the group discussion leaders of the views that emerged from the solution to their particular problem. Two extra presentations were squeezed into the lunch time.

Five of the eight problems that were presented led to the beginning of collaborative arrangements for further work. The QPSC at Massey has developed a flexible array of methods for accommodating collaborations with industry. These range from the funding of Masters and PhD students to short term contracts work involving staff members. The success of this first workshop has led to plans for repeating it, probably in 1991.

Hugh Morton



Hugh Morton leading the discussion on the road accident time series problem. Graham Scott is nearest the camera.



## Thoughts on Statistical Modelling by Cathy Macken

While preparing to present a seminar recently, I read the following comment by G. McPherson(1):

“The past decade has seen enormous statistical energy directed at expansion of the range and computational accessibility of statistical methodology. ... (yet) there is extensive anecdotal evidence of misuse and inefficient use of statistics, of antistatistics feeling and distrust of findings which rely on statistical evidence.”

After reading the comment, two questions came to mind:

A. What roles *can* the mathematical sciences play in science and technology?

B. What roles *do* the mathematical sciences play in science and technology?

In the physical sciences, especially physics and chemistry, theory has played a fundamental, and in some cases, essential, role in advancing knowledge. My observation is that, by contrast, in the biological sciences, where variability abounds, the answers to B are a small subset of the answers to A.

I cannot provide solutions to the malaise which McPherson and others (1,2,3) mention. However, I do have some thoughts which I believe are relevant here. They concern two important scenarios in which, in my opinion, statistics is not a suitable tool. The first scenario features the questions answered by the analysis; the second scenario, a view of variability. These scenarios may overlap or coincide.

*What type of question does a typical statistical analysis answer?* It has been my experience that statistical models, which range from purely empirical to partially theoretical, are very well adapted to answering “who?what?when?where?” type questions. However, their ability to answer yearning “why?” type questions seems to be limited. To illustrate, I recall a data analysis which I presented to my introductory statistics class recently. The data set gave the actual (A) and reported (R) numbers of sinkings of German

submarines by the US Navy in World War II. If the question of interest is: “how are A and R related?”, then a regression model may be appropriate. However, if the question of interest is: “why do A and R differ?”, then a model on the basis of (perhaps not observable) interacting processes such as communication technology, personnel error, and sociological factors may be necessary. I believe that because of the largely empirical nature of statistical models statistics is of limited use in situations such as just described, when the processes are not closely related to the recorded observations. Further, the tools of statistics can be applied to a generic data set. Perhaps universality is bought at the expense of limitations on sleuthing potential. The development of rich, theoretical models is popularly known as the realm of ‘modelling’.

*What is the statistical view of variability?* As Neuts (4) describes, emphasis in a statistical analysis is on the reduction of ‘error’ or uncertainty about the underlying assumed ideal (deterministic) model. Thus, randomness is treated as a secondary effect. Neuts remarks: “I consider that, by treating randomness as a secondary rather than the primary object of study, it has channeled research towards very specific, albeit extremely useful, methods and problems.” What about situations in which underlying processes involve variability of a nature which must be regarded as a primary effect? For example, suppose our task were to describe the lifetime of a bacterial cell. Cell lifetimes are extremely variable, and hence assuming ‘error’ to be a secondary effect has little justification. The objective of measuring cell lifetimes may be to enable selection of an appropriate probability function for describing random lifetimes. Fully stochastic models commonly appear as stochastic processes, but there is a great need in biology for de novo stochastic models. Unfortunately, statistical inference under these models is not well developed.

My discussion thus far is not intended to lead into a bout of ‘statistics vs modelling’. Indeed I



think that such discussions are wasted efforts: both styles of data analysis are particularly suited to answering different types of questions. What I would like to suggest is that, in approaching a data analysis, we should be very open and discerning in deciding what is appropriate for the situation at hand. Since what we see is often limited by what we know, as applied mathematical scientists we need to be aware (not necessarily in detail) of methodologies outside of the familiar range of statistics: we need to be prepared to follow the path of "why?'s "if this approach seems needed.

Only as we are sympathetic listeners, can we be useful to the data and the person collecting it. If we quickly ask "which technique can I apply here?", rather than carefully examining "what are the important questions to answer?", we may be guilty of the behaviour which leads scientists to say "If I need statistics then I must have done a bad experiment".

- (1) McPherson, G. (1989) The scientists' view of statistics - a neglected area. *JRSS A* 152, 221-240.
- (2) Chatfield, C. (1985) The initial examination of data (with discussion). *JRSS A* 148, 214-253.
- (3) Healy, M. (1984) Prospects for the future: where has statistics failed? *JRSS A* 147, 368-374.
- (4) Neuts, M. (1985) Measured uncertainty: a key ingredient in the scientific method. Distinguished Faculty Lecture, University of Delaware College of Arts and Sciences.

"To put the matter crudely, the statistical approach to a problem is first of all a confession of ignorance" Morris Kline (1962, p.636)  
*Mathematics a Cultural Approach.*

## Assessing the Cost of Poor Quality

New Zealanders tend to say Quality is expensive. Crosby says it is free. Now Dennis Beecroft is coming here to tell us that we cannot afford to not get into Quality!

Dennis is coming to New Zealand to present seminars on assessing the costs of poor quality. He will show the basic financial concepts needed for developing a cost of poor quality system. Total poor-quality costs are frequently about 20-40% of the value of sales (based on data gathered in the USA), showing that investment in quality improvement is good value.

Dennis Beecroft is the Managing Director of the Institute for Improvement in Quality and Productivity, (IIQP), Waterloo, Canada (Jock Mackay is the Director). He is an expert in the area of Quality Management, having experience in Canada, the US and Japan.

When I visited the IIQP last year I was impressed with the fact that they obviously had succeeded in persuading businesses to learn about statistics! Manufacturing and service organizations were often sending four, five or six of their workers to extended seminars on topics like SPC and Design of Experiments.

With the backing of DSIR we have the opportunity to hear Dennis in New Zealand. The seminars are intended for managers who need to improve their knowledge about the costs of poor quality and they do not need to have a background in accounting. I think statisticians could also find this information valuable for use as a marketing tool. For companies, we are recommending that representatives from both Quality Assurance and Accounting attend.

The first seminar will be in Wellington on April 3-4 and the second in Auckland on April 10-11. If you want a brochure or simply want to find out more about the visit contact Jean Thompson or Tricia Caughley at DSIR, AMD, PO Box 1335, Wellington, phone (04)727-855, fax (04)710-231.



## Adelaide '89 Conferences

Adelaide early in July was cold and damp, much like Palmerston North. Dallying on the mudflats of the Torrens was no counter attraction to the warm lecture rooms of the SAIT where both a Biometrics Society meeting and STATCOMP89 were being held.

Biometrics society meetings have a unique ability to attract both theoreticians and practitioners. Nearest neighbour analysis is still absorbing effort, and Cullis and Gleeson have analysed 1019 variety trials obtaining a 42% reduction in variance over complete blocks compared with 33% reduction with incomplete block analysis and recovery of interblock information. If economic realities ever make field trials uneconomic in Australia problems described by Warren Muller with data from the 8x12 array of cells in microtitre plates will still keep nearest neighbour specialists employed. Charles McGilchrist's GLMs will provide the basis for them to build on.

STATCOMP89 was an international conference and my attendance appreciably reinforced the claim. Its themes were expert systems, simulation software and computers in surveys. Daryl Pregibon was the expert system expert. His conclusion was that expert systems for statistics have not appeared and show no signs of doing so. Statistical software has moved from data reduction to data production, making analysis even more bewildering than ever. The difficulty is that successful data analysis depends strongly on the context, and this is extraordinarily difficult to incorporate into software. My suggestion of using pictures still leaves the problem of teaching a computer to recognise the picture, an unsolved problem except in very structured situations.

The good news is that the search for expert systems is producing user friendly software, that is software which provides sensible choices at

each stage and straightforward ways of implementing them. Daryl Pregibon described a program written in S for fitting tree based models. The user was able to interact with the screen in a way which would seem standard to Macintosh users, but perhaps revolutionary to users of those other computers. It was certainly a long way forward from the SAS/SPSS/GENSTAT/MINI-TAB back home.

Peter Diggle presented an excellent survey of monte-carlo inference, but there were no application papers. Perhaps a better computing environment than FORTRAN subroutine packages is needed before monte-carlo can take over the world.

Len Cook further broadened our outlooks with his description of computer assisted coding as used for the NZ Census. The constraints we expect to be enforced on a government agency contrasted greatly with the spy cameras being put in living rooms by market research companies. These can tell what the television or video is showing, who is in the room and whether they are watching. Clearly it could record far more.

Greg Arnold

---

## Bayesian News from Canterbury

Dennis Lindley will be at Canterbury in August and September. Graham Wood is having a good time learning Bayesian statistics at Wisconsin while Murray Smith is at Purdue working with Jim Berger; his Bayesian colours will show soon. Frank Lad's book "Operational Subjective Statistical Methods: A Mathematical, Philosophical and Historical Introduction" is progressing and is being used in draft form in Stage 2 classes.

John Deely has just come back from 2 months in the U.S., giving talks at several places and attending the Winter meeting of the ASA at Orlando. Somehow Key West also got into the itinerary.

John Deely



## VUW/ISOR

The major event of the summer was the S workshop which kept everyone working despite the superb weather. The workshop was a great success.

Brian Dawkins returned from Canada to find his Mac had been removed from his office! He has been working on enhancements to S - guess he doesn't need a Mac anyway. David Vered-Jones has taken over the Chairmanship of ISOR and is now using phrases like "management tools".

Both Peter Thompson and David have been globe trotting. David went on a complicated itinerary. The only definite thing to report is that he did stay in India at some stage. Peter visited CSIRO to work with Murray Cameron on Time Series Analysis.

Finally, ISOR is now the proud owner of a Common Room with comfy chairs and a Zip. When we finally get the coffee tables we can entertain visitors in style!  
Peter Smith

---

## Dept of Statistics-Maths & Stats

Minoo Meimand has gone on maternity leave. Frank Nolan is spending 2 months leave running around the European Cross Country circuit. Vince Galvin is returning, via Asia, after an 18 month break working for the British MAF.

On the work front, the sample design for the enhanced Household Labour Force Survey has finished. The survey will go to 24,000 households per quarter and will produce reliable monthly national estimates of the Labour Force along with more extensive regional estimates.

A study of the Government Budget on income distribution is underway and due out in May.

We are looking at new technology in the form of handheld computers for collecting price data for the CPI and are developing a proposal to use graphics workstations for editing data.

Alistair Grey

## Otago

Katrina Sharples has returned to Otago on a one year MRC Repatriation Fellowship. Katrina did her PhD at the University of Washington in Seattle supervised by Norman Breslow. Her topic was "Regression analysis of correlated binary data."

Roger Mead, will be visiting from August 1990 to April 1991. Toby Lewis is here for two weeks in August while Lyman McDonald will be here for all of August.

John Rayner

---

## Auckland

Roger Marshall (Community Health) has been promoted to Senior Lecturer and is presently on leave at Exeter University. Alistair Stewart went to Helsinki in November as part of a major study on heart disease.

The mail system on our Sun Sparc stations is now working well. All members of the Dept. of Maths & Stats can be reached by e-mail using an address like "name@maths.aukuni.ac.nz" where "name" is, for example, "c-wild". The initial of the first name is hyphenated to the surname. Whether the recipient reads their mail is a different matter!

We have two visitors for the first term, Shayle Searle from Cornell and Bill Thompson from the University of Missouri at Columbia. Cathy Macken's work on protein evolution has been discussed in *Science News* (Vol. 137, Jan 13, 1990, p26-27). This may make her New Zealand's most widely known statistician!

Brian McArdle, Alan Lee and Chris Wild went to the S workshop, which they thoroughly enjoyed. However, staff at ISOR and AMD may face legal action for forcing us to overeat.

Chris Wild



### Statistics for Field Ecology and Resource Selection

Bryan Manly and Lyman McDonald will run this five day workshop for scientists working for government and private organizations. The course will be held at the University of Otago in Dunedin from August 6 to August 10 and will provide a review of statistical procedures related to sampling and analysis of biological populations. For more details contact Bryan Manly by telephone (024)797-774, Fax (024) 741607, or email [Math05@OTAGO.AC.NZ](mailto:Math05@OTAGO.AC.NZ).

### Second Independent Conference of the International Association for Official Statistics

Beijing, 16-19 October, 1990  
Those interested please contact  
State Statistical Bureau  
38 Yuetan Nanjie, Sanihe  
Beijing 100826, China

### Waikato

Recent speakers at our seminar series have included Cathy Macken and Brian McArdle (Auckland), Ken Dodds (Invermay), Tom Shively (Texas) and John Chambers (AT&T Bell Labs). We have been bold enough to write a prescription outlining the sort of seminar which pleases us and have been delighted with the value the speakers have delivered. This year's meeting of statisticians in MAF, **MAFSTAT 90**, is being held at Ruakura on March 27-28. Shayle Searle is the keynote speaker. An **Experimental Design Workshop** follows (March 29-30). This international workshop is being organised by Nye John to honour Desmond Patterson (Edinburgh). Other speakers include Emlyn Williams, John Eccleston, Ken Russell, David Fletcher, Adrienne Kirby and Chris Triggs.

Peter Scholtes of Joiner Associates completed a successful 10 day visit organised by the Unit for Quality and Productivity Improvement. He gave two-day public seminars in Auckland and Wellington, concentrating on the effective use of teams in 'Quality Management' and also adver-

tised the role of statisticians in this area. David Whitaker, currently an operations research specialist with the DSIR, is to join the Centre.

The refurbished offices of the Ruakura statisticians were baptized with 5cm of water on the floor having soaked through 4 floors of laboratories. Wet jokes about 'laundering data' and 'cleaning up data' abounded! Harold Henderson's bookcase sheared off the wall with the weight of wet books. He would like to buy back issues of journals and replace some books. Please contact Harold if you have some for sale!

### Mathematics Colloquium Auckland University

May 14-17

The first part of the programme runs from Monday 14 to Wednesday 16 May and consists of hour-long invited talks mixed with half-hour contributed talks. Thursday, the 17th will be a Mathematics Education Day.

Invited speakers include Jim Ansell, Marston Conder, Jeff Hunter, Keith Miller, Brailey Simms, William Thompson, and Gillian Thornley. The maths education day has invited speakers Trevor Boyle and Brenda Burns.

Contributed papers are welcome. Intending contributors are asked to send their pre-registration form by April 14 and to submit an abstract to the Colloquium Secretary by **28 April**.

Social arrangements include an informal gathering the night before the Colloquium begins, a reception on Monday evening and the Colloquium Dinner on Tuesday night. Partners are welcome to all these events.

Accommodation is available at O'Rourke Hall for \$41.00 (plus GST) per night. Please book this as soon as possible as the deadline has already passed.

Alastair Scott is the convenor and Gary Tee is the secretary. Please submit abstracts for contributed talks to,

[Tee@maths.auckland.ac.nz](mailto:Tee@maths.auckland.ac.nz)