

statistical
society of
australia

newsletter

30 november 1989

number 49

THE 1990 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 2nd to 6th, 1990. Society members will have received the Preliminary Registration Brochure in the mail, 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, has agreed to act as 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 is occurring 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 Föllmer - "Financial Mathematics"

In addition, there will be invited talks from

Alistair Mees - "Chaotic Systems"

Alistair Scott - "Ordinal Regression"

and 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.

Editors: D.E.Shaw, CSIRO, DMS, PO Box 218, Lindfield, NSW 2070

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*The views of contributors to this Newsletter should not be attributed to the Statistical Society of Australia
Deadline for next issue: 19 February 1990*

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 sections will provide further Conference sessions.

Contributed papers are, of course, very welcome to 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.

Sun Microsystems Lectures

Sun Microsystems Australia Pty Ltd has generously agreed to sponsor a lecture series, to be known as the Sun Microsystems Lectures in Computer Intensive Statistical Research. Professor Brad Efron's keynote address to the 10th Australian Statistical Conference/2nd Pacific Statistical Congress will form part of the inaugural lecture series. We are very grateful to Sun Microsystems Australia Pty Ltd for their support of an important area of statistical research in Australia.

BRANCH REPORTS

New South Wales

Mapping the Human Genome

At the August meeting of the Branch, Dr Susan Wilson (ANU) spoke on 'Genetic Engineering: The Statistical Perspective'. Sue introduced the topic with a brief history of genetic traits, and description of the relationship between cell, chromosomes, genes and DNA.

The latest goal in human genetics is to map (locate) and sequence (order) the DNA in the genes and the intergenic regions that connect them (the entire human DNA complement or genome). The aim is to develop both genetic and physical maps (over the next few decades). This project involves many challenging problems for statisticians.

Sue explained the concept of recombination and two-point linkage analysis, and the aims of linkage analysis (for example, genetic counselling).

Sue illustrated the statistical issues in connection with the multipoint mapping of loci in the region of cystic fibrosis (which had been studied at the 1988 Genetic Analysis Workshop). A resampling approach was proposed.

Multiskilling of Statisticians

'The Multiskilling of Statisticians' was the topic addressed by three speakers at the September meeting, organised by the Section on Industrial Statistics. A main objective of the session was the role of statisticians as consultants in Total Quality Management (TQM). The speakers gave their views on the differences between the statistician working in industry and in a scientific environment, and the extent to which statisticians should be involved in non-technical aspects of consulting - how multiskilled should a statistician be?

Geoff Eagleson (AGSM) described the role of the consultant statistician in general and the special constraints existing in the industrial setting. Geoff also discussed the wider role of the statistician -- should there be legal responsibility (cf. auditors)?

Doug Shaw (SIROMATH) noted that highly technical tools are not usually necessary. The statistician is needed for guidance on what to measure, how to measure it, and how to display and interpret the measurements. Doug outlined the essentials for a statistician in TQM. Doug also gave his views on the effects that management consultants have had in TQM.

Mary Willcox (CSIRO DMS) spoke of the philosophy of TQM and how it is affecting the management process. The statistician can help instill the analytical approach. To do so the statistician needs to be continually involved and needs skills in communication, training, marketing and business in addition to statistical skills.

New Technology in ABS

The October meeting of the Branch was addressed by Dennis Trewin (Australian Bureau of Statistics) on 'Applications of New Technology and Statistical Techniques to Improve Information Services in the ABS'.

Having outlined the ABS structure and computing facilities, Dennis detailed the major current influences on the ABS. These included marketing, productivity, job design and privacy issues. Marketing considerations require more emphasis on information services and consultancy.

Technological developments have led to changes in several areas. Some data is provided electronically to the ABS; OMR is to be used in the 1991 Census, as is computer assisted coding. There is also computer assisted telephone interviewing. Other advances have related to the dissemination of information: electronic data services, and Census-86 on CD-ROM. Future advances include knowledge-based systems and computer-assisted personal interviewing.

Dennis also outlined the effects of methodological developments on such areas as total survey design and small area statistics.

Victoria

Quality Function Deployment and other Quality Matters

John Field of CSIRO DMS, Adelaide, addressed the Branch on 22 August, 1989. John was recently in the US where he attended the Annual Quality Congress of the American Society of Quality Control and also a course on Taguchi methods given by G.E.P. Box. He also spent some time with Joiner Associates and made the interesting remark that Joiner has 9 consultants of whom only three are statisticians, the rest are psychologists and organisational behaviour persons.

Quality function deployment (QFD) originated in Japan. It is a systematic method of ensuring that all aspects of product design and development are driven by the customers. The QFD approach consists essentially of first eliciting customer requirements and then providing the design concepts and manufacturing supports to ensure that the finished products satisfy all quality requirements. John elucidated the main steps in the QFD approach by using the design of a pencil as an example.

Several benefits are seen to accrue from the QFD approach. Some of these are a better understanding of customer requirements which in turn lead to increased customer satisfaction; it also fosters communication between departments which helps to focus and intensify efforts, and establishes a database on products for future design and process improvement.

1989 Belz Lecture - September 26

Prof. John Darroch of Flinders University gave the 1989 Belz Lecture to an audience of about 60. His title was 'Where do Probabilities come from? Sources of Stochastic Variation'.

The underlying theme of Prof. Darroch's talk was that in many situations the method of assigning probabilities to events for statistical analysis is often unclear and glosses over the possible stochastic mechanisms. Using several examples such as the Fisher 2 x 2 exact test and classification problems he illustrated that making different assumptions about how probabilities are assigned can lead to different models for the data and hence possibly different conclusions. The key is to more closely examine the type of stochastic variation in a given situation and to consider models based on assumptions about how probabilities may depend on the point of view of the the observer and also on the definition of the possible events. Using simple statements like 'the probability of getting the flu is 18%', Prof. Darroch showed that such statements often mask the underlying variation among individuals by quoting some sort of average probability. He emphasised that a more careful analysis of just what is meant by a probability in a given situation can lead to more appropriate models and a better understanding of the process being studied.

Prof. Darroch ended with a checklist of issues:

- there is room for improvement in the treatment of sources of stochastic variation in textbooks and basic training;

- skills in identifying stochastic variation are useful to industry (quoting Deming on management needing to understand variation);

- we should question accepting 'significant' inferences if there is no careful identification of the actual sources of stochastic variation;

- hostility to using inference based on randomisation in experiments is misplaced.

Western Australia

Queueing Models for a Cyclic Switch

The August meeting of the branch was addressed by Mr Dean Economou (Dept. of Electrical Engineering - UWA) and Dr Peter Taylor (Dept. of Maths - UWA). They jointly presented an interesting talk on models for arrivals and service of packets at a telecommunications switch. In this talk various models for a particular type of telecommunications switch were considered.

Variable length packets composed of segments arrive and are served cyclically, with one segment from the head of each packet being processed in turn. Segments from partially processed packets are stored in a reassembly buffer until the full packet is available. The aim is to determine both the equilibrium number of partially processed packets and total number of segments stored in the reassembly buffer.

For the case of geometrically distributed packet lengths the distribution of the number of packets in the buffer can be derived using a method similar to one used by Kleinrock. However it is difficult to get estimates of the total number of segments and to analyse non-geometric packet lengths using this method. These problems have been partially overcome by using a continuous approximation for the number of processed packets and treating the queue as a server-sharing queue.

Dean and Peter compared the results from the two methods together with simulations and discussed their differences.

Some Pitfalls in the Application of Geostatistics and how to tackle them

Daniel Guibal of SIROMINES, Sydney, was to talk on the above topic during our September meeting. Unfortunately, he could not arrive in Perth (due to "Pilots' strike" !) to address the meeting. However, Dr Geoff Riley of SIROMATH in Perth, who also has considerable experience in Geostatistics, offered to give Daniel's talk (proxy?!).

The application of geostatistics to a practical problem requires a good knowledge of its theory and of its limitations. Geoff's intention, in this talk, was to look at several ways to overcome them. The different stages of a geostatistical study - variography, global and local estimation, recoverable reserves were discussed. Apart from statisticians, there were experts in fields such as mining present among the audience.

Statistical Computing

Brian Murphy of the UWA Dept. of Management presented a talk entitled 'Statistical Computing: Classical Algorithms and Languages, and Potential new Directions', at the Branch's October meeting.

He discussed 4GL systems in relation to statistics. The 4GL systems have promised great economies in constructing new computational programs, but not much has altered as far as statistics is concerned. Statisticians still deal daily with old style statistical packages and ideas. An example of a package which allows extensive user access to internal code was described, illustrating how statisticians can then easily write and include their own modules in off-shelf packages.

The high level language approach demands formal techniques of computer science to be employed, to ensure that efficiency and style are not lost. These demands were illustrated via discussion of certain recursive algorithms, which can be gainfully employed in statistical operations concerning multidimensional tables, from forming and printing them to using them in economically in AOV and Log-linear modelling.

Workshop on 'Statistics in Diabetes Research'

UWA Dept. of Mathematics, in conjunction with the WA Branch of the SSA, is to hold a one-day workshop on above theme. This workshop will be held on Thursday, November 30th, 1989 at UWA. Professor Niels Keiding will be the main speaker and will present two keynote papers: "A prevalent cohort of Danish diabetics - retrospective estimation of incidence and follow-up of mortality" and "Diabetes mortality - the importance of nephropathy and application to life insurance". Prof. Keiding is one of the world's foremost workers in the application of modern techniques in biostatistics and medical statistics and has co-authored several important recent papers in diabetes research.

Additional talks on descriptive epidemiology, applications, and methodology will be presented by other attendees. Further information can be obtained from the organisers, Ian James on phone (09) 380 3346, email james@madvax.uwa.oz and Matt Knuiman of Division of Public Health, UWA on phone (09) 389 3159).

Queensland

The September meeting of the Queensland branch was held in conjunction with the series of statistics seminars being conducted by the Department of Mathematics, University of Queensland. Dr David Balding from the Department of Statistics, Oxford University, addressed the meeting on the subject of "Annihilating and Coalescing Particle Systems: Models of Diffusion-limited Reactions". David proposed that the exact evolution of diffusion-limited reactions, with arbitrary initial configurations of particles, can be described from a stochastic model provided by systems of annihilating or coalescing random walks on Z or Brownian Motions on R . The asymptotic behaviour of these systems can be derived in terms of the structure of the initial configuration. The results highlight

the inadequacies of corresponding deterministic descriptions.

For our next meeting, a rare lunchtime event, we had a complete change of topic. Dr Kevin Balanda of the Epidemiology and Prevention Unit, Queensland Health Department spoke to a mixed audience about "Recent Changes in Pap Smear Rates and an Associated Cervical Cancer Screening Campaign". In order to assess the impact of a National TV campaign, designed to encourage all women to have regular Pap smears, data from private pathology laboratories in Queensland were analysed. There were significant excesses, particularly among women over 60, in the number of Pap smears taken during the months of the campaign. The percentage and severity of abnormalities detected did not diminish during the course of the campaign, indicating that the observed excesses were not due to the *well woman effect*. This would happen if women, already adequately screened, increased the frequency of presenting for Pap smears.

Research in Signal and Image Analysis

STATISTICIANS/ MATHEMATICIANS

CSIRO DIVISION OF MATHEMATICS & STATISTICS
NORTH RYDE, NSW

The Age of Information Technology demands high level mathematical and statistical research in a number of areas. We are actively conducting research in:

image enhancement	image reconstruction
image analysis	analysis of spatial data
pattern recognition	chemometrics
time series	signal analysis

Our aim is to work with industry to define and solve key long-term problems and to ensure that our solutions are implemented. We collaborate with scientists and engineers from all sectors of industry and from other CSIRO Divisions.

At present we have many more interesting and important research problems than we can cope with, so we are seeking new people with the skills to help solve these problems.

These new people will have a PhD with a strong statistical or mathematical emphasis, preferably with experience in the abovementioned areas. They must have a strong desire to use their research to solve real problems rather than unrealistic mathematical abstractions. The problems we have and see arising will challenge their intellects to the fullest extent. We are seeking experienced people as well as recent PhD's and can provide attractive salaries and working conditions for the right scientists.

We have excellent computing facilities based around Unix workstations. We also have very good library facilities and research links with universities in Sydney, The Australian National University and universities and research institutions in North America, Asia, the United Kingdom and Europe.

If you are interested in working with us on these problems, contact:

Dr Murray Cameron (02) 413 7566 email:
murray@syd.dms.csiro.au or send a
resumé of your qualifications
and experience (including
referees) to:

The Chief,
CSIRO Division of Mathematics
and Statistics,
P.O. Box 93,
NORTH RYDE, NSW 2113
by 8 December 1989.



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Canberra

Coverage-Robustness and Regression Diagnostics in Heteroscedastic Regression

Dr Alan Dorfman of Tulane University New Orleans, discussed the topic at the branch's July meeting. Dr Dorfman outlined the use of straight OLS regression and robust-against-heteroscedasticity variance estimators, such as the jackknife and its variants. However, in unbalanced designs even the robust variance estimators are vulnerable to poor coverage. A remedy, described in the talk, is to regard the leverages as functions of design and weights, and to re-weight, not in accord with the supposed variance structure, but so as to achieve constant leverage.

Genetic Engineering: The Statistical Perspective

At the Branch meeting of 15 August Dr Susan Wilson of ANU discussed the statistical aspects of recombinant DNA technology. The latest major goal in human genetics is to map and sequence the DNA in genes and the intergenic regions that connect them. Achievement of this goal could revolutionise our whole understanding of the human body and behaviour, and have profound impact on health care and disease prevention. In this presentation, Dr Wilson gave an overview of the current statistical methodology and developments and described the challenging problems for statisticians in this dynamic research area.

Hierarchical Models for Conditional Quantile Functions

Dr Roger Koenker, University of Illinois, described methods for estimating non-parametric (spline) models for conditional quantiles at the Branch's September meeting. The methods were illustrated using an application dataset consisting of 3-monthly, hourly time series on electricity consumption for each of several hundred households. Models for several quantiles of the demand cycles are estimated for each household; parameters of the estimated demand cycles are then modelled as functions of household characteristics in the hierarchical framework of Lindley and Smith.

Telephone Surveys

At the Branch's meeting on 31 October 1989, Dennis Trewin, David Steel and Geoff Lee from the ABS discussed various aspects of telephone surveys. The telephone system can be used in surveys in a variety of ways, either to provide the sampling frame, as in sampling from the telephone directory or Random Digit Dialling, or as the collection medium. Dennis Trewin reviewed the different uses of telephones in survey work and provided an international comparison of telephone coverage rates and the implications of these rates for telephone surveys. David Steel gave the results of an analysis of telephone coverage in Australia and the biases that would be obtained by confining samples to the telephone population. The effectiveness of post stratification in reducing these biases was also considered. The use of telephones as the collection method for the second and subsequent interviews in the Monthly Population Survey is being tested to see if the change from a field interviewing

methodology has any effect; Geoff Lee presented some preliminary findings.

1989 Careers Expo

Careers 89 was held at the Bruce Campus of the ACT Institute of TAFE from 18 to 20 July 1989. This is an annual event held in conjunction with the Tertiary Orientation Program (TOP). Professional societies, employers and other interested groups contribute and supervise displays through which they communicate with the public. During the day, the exhibition is visited primarily by busloads of school students (including colleges, high schools and primary schools) and their teachers; in the evenings a broad cross-section of people and families visit the displays.

The Australian Bureau of Statistics (ABS) has been a regular participant in the exhibition in previous years but this year marked the first participation of the Canberra Branch of the Statistical Society. We took as our theme the slogan "Statisticians: Making Data Useful". Our display (which we requested be adjacent to the ABS display) consisted of two cartoons advertising our theme, a number of posters produced by Emlyn Williams, Milly Lubulwa, Caroline Bowles, Ray Lindsay, Ross Cunningham, Patty Solomon and Alan Welsh, and two Macintosh SEs running MacSpin (on farm classification data prepared by Ray Lindsay), FASTAT (on AIDS data prepared by Sue Wilson). We tried hard to use locally derived data sets and problems in our display. We also had freely available a photocopied sheet giving the salary levels of ABS, CSIRO and academic statisticians, and, for particularly interested visitors, the Society's excellent glossy pamphlets "Want to be a Statistician?" and "Careers in Statistics". The salary information was of such great interest to the teenagers that we had to keep on making additional copies of the information sheet. About 16 members (in groups of three or four) were involved in supervising the display. This entailed being available to encourage people to explore the data sets using the Mac software, supervising and guiding their exploration, interpreting the results and generally talking about statisticians' training, work and careers.

We decided in advance that our first appearance in the display would be a learning experience and we would not expect much in return. Nonetheless, we did somewhat better than expected. We were particularly pleased to talk to mathematics teachers and careers advisers and even arranged for some further contact with senior students through the schools. A number of people were interested in the Macs and sat down to explore the data sets we provided. Some senior school students and university students expressed interest in the profession and were given verbal and written information. The primary school children were unexpectedly rewarding visitors who were remarkably adept with the Macs and very enthusiastic about their experience interacting with them. (A group of ten year olds held an informed discussion comparing the APPLE II machines at school with our Macs.)

Our profile undoubtedly benefited from our participation in Careers 89 and we plan to use our recent experience to improve our participation in future exhibitions. Indeed, the council has considered a set of recommendations for

the 1990 display and planning will begin shortly. These recommendations and the components of the display can

be made available to other Branches.

MISCELLANEA

Youth Employment and Unemployment

Australian Journal of Statistics Special Volume 31A
W. Dunsmuir, C.C. Heyde, I. McRae (Editors)
August 1989, 225 pages,
ISSN 004-9581

This Volume provides a wide-ranging and in-depth analysis of this nationally significant topic. It contains six contributions concerned with participation analysis and four concerned with duration analysis. The Australian Longitudinal Survey has provided a focus for the work.

The Volume was prepared as a Bicentennial Project of the Statistical Society of Australia. It will be of interest to economists, social scientists and officers in relevant areas of government as well as to statisticians.

The price is \$30 and copies can be obtained from the Statistical Society of Australia, GPO Box 573, Canberra ACT 2601, Australia.

New Zealand

To coincide with the NZ cricket tour of Australia here are a few notes from another NZ team, the NZ Statistical Association. The annual conference was at Auckland University this year. It went very well, having a pleasant atmosphere, some interesting talks and even fine weather. On the conference horizon is ICOTS 1990 at Otago and the International Biometrics Conference at Waikato in 1992.

Some noteworthy personal news is that Jeff Hunter of Auckland University has been appointed Professor of Statistics at Massey University. All other personal news is strictly confidential!



THE UNIVERSITY OF ADELAIDE

invites applications from both women and men for the following position:

PROFESSOR OF STATISTICS (Tenurable)

(Ref: 1535) in the Department of Statistics, Faculty of Mathematical Sciences, following the retirement of Professor AT James.

Applications are invited for the position of Professor of Statistics from experienced practising Statisticians with qualifications in theoretical and applied statistics and statistical computing.

A proven commitment to excellence in research, teaching and consulting is essential.

Applicants will be considered with research interests in any branch of statistics.

The successful applicant would be expected to take the Chairmanship of the Department of Statistics for five years in the first instance, after which the Chairman would be elected according to the Statutes for Departmental Government.

The current research interests of the department include Medical and Biological Statistics, Financial and Actuarial Statistics, Multivariate Analysis, Design and Analysis of Experiments and Theoretical Statistical Inference. In addition the department has a firm commitment to Statistical Consulting.

The Department of Statistics is due for review in the near future. The Professor will be expected to contribute to the review process and to take part in the ongoing planning processes of the University.

The position is available from 1 July 1990.

Further information concerning the duties of the position may be obtained from the present Chairman, Dr WN Venables, Department of Statistics, telephone (08) 228 5418.

It is University policy to encourage women to apply for consideration for appointment to tenurable academic appointments. Holders of full-time tenured or tenurable academic appointments have the opportunity to take leave without pay on a half-time basis for a specific period of up to ten years when this is necessary for the care of children.

INFORMATION about the general conditions of appointment and selection criteria may be obtained from the Senior Assistant Registrar (Personnel) at the University.

SALARY per annum: \$63,919.

APPLICATIONS IN DUPLICATE, quoting reference number 1535 and giving full personal particulars (including whether candidates hold Australian permanent residency status), details of academic qualifications and names and addresses of three referees should reach the Senior Assistant Registrar (Personnel) at the University of Adelaide, GPO Box 498, Adelaide, South Australia, 5001, telephone 228 5666, Telex UNIVAD AA 89141, Facsimile 224 0464 not later than 15 December 1989.

The University reserves the right to make enquiries of any person regarding any candidate's suitability for appointment, not to make an appointment or to appoint by invitation.

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SPECIAL INTEREST SECTIONS

Medical Sciences

10th ASC Workshop on Statistics and AIDS

Dr Valerie Isham of the University College, London, has agreed to be a keynote speaker for the workshop "Statistical modelling of AIDS and other epidemics", on the weekend Saturday June 30 and Sunday July 1, immediately preceding the 10th Australian Statistical Conference.

She and Dr Ron Brookmeyer (Johns Hopkins University) will lead the workshop in the areas of stochastic modelling and statistical analysis, respectively.

Dr Isham is a member of the Working Group to report to the Chief Medical Officers of England and Wales on prediction of incidence and prevalence of AIDS. Valerie

has a strong background in point processes and stochastic modelling, and she has specialised on back-projection methods for estimation of HIV incidence, and on the transmission-dynamics of HIV infection.

Both Drs. Brookmeyer and Isham will be addressing the Conference on Monday July 2. Dr Isham will be a visitor at the ANU during the week preceding the Conference, while Dr Brookmeyer will be visitor during the week following the Conference.

Local individuals or groups interested in attending or contributing to the Workshop should contact Dr John Hopper (University of Melbourne, Faculty of Medicine Epidemiology Unit, 151 Barry Street, Carlton, Vic. 3053) on (03)-344-6991 or by email on U5531300@ucsvc.dn.mu.oz.

UNIVERSITY OF MELBOURNE STATISTICAL CONSULTING CENTRE

We have a team of 6 statistical consultants working on a wide variety of projects, and we are looking for several new people to join us at the level of

**Research Assistant or
Senior Research Assistant**
(\$24000 - \$31000)

The Centre offers an interesting and exciting environment in which to work, with plenty of opportunities to learn about consulting at first hand. Our client base is about 70% with business, industry and government, ranging across biostatistics, epidemiology, industrial statistics, quality management, time series and sample surveys. The remaining 30% is a similar cross-section of research work within the University.

We are looking for two people with B.Sc.(Hons.) or M.Sc. who can act initially in a support role, but who will move as rapidly as they can to a role as a statistical consultant. A third position, available through the National Teaching Company Scheme, will involve working solely with one of our clients, Amrad Corporation, on statistical aspects of the design and production of medical diagnostic kits. This last is a two year position.

These positions are available from the beginning of 1990, so if you are interested in working with us, please phone the Director, Dr Richard Jarrett, on (03) 344-6995 as soon as possible.

USERS of S and ACE

For anyone who has purchased S from Siromath, or Ace from Graphics Computer Systems, or an S source-code licence from AT&T, CSIRO Division of Mathematics and Statistics now offers an *S Software Support Service* featuring:

- Regular upgrades, including bug-fixes, new dms functions, the latest version of S available from AT&T and improved graphics facilities.
- A Newsletter
- A Hotline Service for rapid response to problems

Contact Sue Clancy on (02) 467 6549 or (02) 416 9317 [Fax], or by *email* using *clance@dmssyd.dms.oz* for more information.

NEWS ABOUT MEMBERS

Professor Terry Speed, Chief of DMS CSIRO 1983-87 and prior to that an Associate Professor of the University of WA, has been elected a fellow of the ASA. The citation reads:

T.P. SPEED, Professor, Department of Statistics, University of California, Berkeley; for research into the algebraic and graph-theoretic structures of statistical models, for distinguished collaborations in studies of scientific problems important for public policy making, and for leadership of a major governmental mathematics and statistics consulting group.

Dr Graham Wilkinson retired from DMS CSIRO on 7 July 1989 after a distinguished international career of over 40 years in statistics. He has had longstanding interests in both computational aspects of analysis of variance and the theory of inference. In recent years he has played a prominent role in popularizing the use of nearest neighbour methods in agricultural field trials.

Dr Doug Shaw, formerly with Siromath in Sydney is now working with DMS CSIRO at their Sydney office. Doug worked with DMS for a number of years before joining Siromath as a Consultant Statistician. The expertise he has acquired in Industrial Statistics will be a considerable asset to DMS in its new role.

Mr Neil Crellin, formerly with DMS CSIRO in Sydney and now undertaking a PhD course at Stanford University in California came through the recent earthquake unscathed. According to Neil not a great deal of damage occurred in the Stanford area despite the magnitude of the quake.

Dr Emeric Binet, a well known member of the Statistical Society, died recently in Sydney. An obituary will appear in the next issue of the Newsletter.

Inaugural Moran Medal for Statistical Science

It is with pleasure that the Australian Academy of Science announces the inauguration of the Moran Medal. This award will be in recognition of the scientific achievements of the late P A P Moran, Professor Emeritus of Statistics of the Australian National University until his death in September 1988.

The award will be made to a scientist for distinguished research carried out mainly in Australia, in one or more of the fields of Applied Probability, Biometrics, Mathematical Genetics, Psychometrics and Statistics. Preference shall be given to younger scientists and to those candidates whose first doctoral degree was awarded not more than eight years ago.

The inaugural award will be presented at the April 1990 Annual General Meeting of the Academy of Science.

Nomination of candidates for the Medal is hereby invited. Proposals should be covered by the nomination form available from the Academy's secretariat and include a *Curriculum Vitae* and sufficient details of the candidate's scientific work and its impact to enable the Academy to assess it in the light of the criteria for the award of the Medal. Proposers should ask at least two referees to forward comments directly to the Academy to arrive by the closing date for nominations.

Nominations are confidential and should be addressed to:

The Executive Secretary
Australian Academy of Science
GPO Box 783
CANBERRA ACT 2601

Telephone: Mrs Faye Nicholls on 062 47 5777

The closing date for nominations is Monday 29 January 1990.

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

Data Analysis Workshop, February 1990, Australian National University, Canberra, ACT. (Full details Newsletter 49.)
 Dr Sue Wilson, DAW Co-ordinator, Statistics Research Section, Mathematical Sciences School, ANU, GPO Box 4, Canberra, ACT 2601. Telephone (062) 49 4460.

Workshop on S Software, 12-16 February 1990, Wellington, N.Z. (Full details Newsletter 48.)

Ray Brownrigg, DSIR AMD, PO Box 1335, Wellington, N.Z.
 Telephone +64 (4) 727 855; Fax +64 (4) 710 231; E-mail ray@dsiramd.dsir.govt.nz

Peter Thomson, VUW ISOR, PO Box 600, Wellington, N.Z.
 Telephone +64 (4) 721 000; E-mail peter@vuwisor.vuw.ac.nz

Workshop on Statistical Modelling of AIDS and Other Epidemics, 30 June - 1 July 1990, University of NSW, Sydney, NSW. (Full details Newsletter 48, 10th ASC.)

Dr John Hopper, University of Melbourne, Faculty of Medicine Epidemiology Unit, 151 Barry Street, Carlton, Vic. 3053. Telephone (03) 344 6991; E-mail u5531300@ucsvc.dn.mu.oz

10th Australian Statistical Conference, 2-6 July 1990, University of NSW, Sydney, NSW. (Full details Newsletter 48.)

Dr Doug Shaw, Chairman of the Programme Committee, CSIRO DMS, PO Box 218 Lindfield NSW 2070.

Workshop on Statistical Methods in Image Analysis and Processing, 6-7 July 1990, University of NSW, Sydney, NSW. (Full details Newsletter 48.)

Mark Berman, CSIRO DMS, PO Box 218, Lindfield NSW 2070.
 Telephone (02) 413 7568.

5th World Conference on Computers in Education, 9-13 July 1990, Sydney, Australia.

Information: WCCE/90, PO Box 319, Darlinghurst, NSW 2010, Australia.

The Third International Conference on Teaching Statistics (ICOTS 3), 19-24 August 1990, University of Otago, Dunedin, New Zealand. (Full details Newsletter 46 and this issue.)

CONSORTIUM FOR RESEARCH IN COMPUTER INTENSIVE STATISTICAL METHODS

Data Analysis Workshop

A Data Analysis Workshop on the theme of Latent Variable and Structural Models will be held from 31st January to 2nd February at the Australian National University. The Special Guest and Keynote Speaker is Professor Brian Everitt from the Institute of Psychiatry, London.

Supported by the Department of Industry, Technology and Commerce (DITAC) Bilateral Science & Technology Programs, the Workshop is the first in a series proposed to define the state of the art in applied statistics. The Consortium for Research in Computer Intensive Statistical Methods also supports this endeavour.

The models included within the scope of this Workshop are known by many alternative names, dependent on their disciplines of application, including linear simultaneous equation models, covariance structure models and "LISREL" models. Many users may not be aware of the extensive literature under these different titles. The Workshop will address this issue, among others.

Application of the models are found in many disciplines including: Psychometrics, Medical Science, Biological Science, Statistical Science, Physical and Chemical Sciences, Econometrics, Marketing, Management Science, Quality Control, Geology, Behavioural Science, Education, Social Science and Political Science.

Contributions from all these disciplines are encouraged. Keynote speakers from Australasia, representing some of these disciplines, will be announced later.

The first day of the Workshop will contain a demonstration of a range of appropriate software. The second and third days will be devoted mainly to contributed papers and discussion relevant to the theme. Space is limited and preference will be given to those making a contribution, such as an analysis of some Workshop data or a description of another application or a methodological contribution. The Workshop data are from a multiwave panel study carried out by the Social Psychiatry Research Unit, ANU.

Further details and information available from:

Dr Sue Wilson,
 DAW Co-ordinator
 Statistics, SMS, IAS, ANU
 GPO Box 4, Canberra ACT 2601
 Tel: 61+(62) 494460
 Fax: 61+(62) 490759
 E-mail: srw308@cscuniv.anu.oz

Workshop on S Software, 12-16 February, 1990

An international workshop on the New S Software will be hosted by the DSIR Applied Mathematics Division and Victoria University of Wellington Institute of Statistics and Operations Research, 12-16 February, 1990. The primary goal of this workshop is to provide an international forum for the exchange of information relating to current and future research and development using the S software.

The workshop is oriented towards major S users and developers around the world, and will feature one of the principal authors of S from AT&T Bell Laboratories, John Chambers.

Numbers are expected to be limited, so intending participants are requested to send an abstract of at most one page describing their interests in S and potential contributions towards the workshop.

For further information contact:

Ray Brownrigg, DSIR AMD, PO Box 1335, Wellington, N.Z., E-mail: ray@dsiramd.dsir.govt.nz; telephone: +64 (4) 727 855; fax: +64 (4) 710 231 or Peter Thomson, VUW ISOR, PO Box 600, Wellington, N.Z., E-mail: peter@vuwisor.vuw.ac.nz; telephone: +64 (4) 721 000.

10th Australian Statistical Conference, 2nd Pacific Statistical Congress, 2-6 July, 1990

The Programme Committee has been advised of two workshops to be held in conjunction with the Conference; each workshop will also contribute a session to the main Conference programme.

The section on Statistics in the Medical Sciences will organise a workshop on 'Statistical Modelling of AIDS and Other Epidemics'. This workshop will be held on the weekend preceding the Conference, and will contribute a Conference session on Monday July 2. Associate Professor Ron Brookmeyer of The Johns Hopkins University has accepted an invitation to be a Keynote Speaker at the workshop and Conference.

There will be a workshop on Image Analysis on the weekend following the Conference, with a Conference session on this topic on Friday July 6. Professor Mike Titterton will be Keynote Speaker for the workshop.

Further details of the Conference programme may be obtained from the Chairman of the Programme Committee, Dr Doug Shaw, CSIRO DMS, PO Box 218, Lindfield NSW 2070.

Workshop on Statistical Methods in Image Analysis and Processing, 6-7 July, 1990

This workshop, being organised jointly by the Consortium for Research in Computer Intensive Statistical Methods, the CSIRO Division of Mathematics and Statistics, Macquarie University and the University of Western Australia will be held at the University of New South Wales on the 6th and 7th July, 1990 (at the tail of the

10th Australian Statistical Conference). Professor Ulf Grenander of Brown University and Professor Mike Titterton of the University of Glasgow have agreed to be keynote speakers. At this stage, it is expected that there will be presentations relating to statistical methodology, image processing software, and applications in medicine, remote sensing, astronomy and industry. However, the organising committee (which consists of Mark Berman (Chairman), (CSIRO DMS, PO Box 218, Lindfield NSW 2070, telephone (02) 413 7568), Tim Brown, Peter Hall and Malcolm Hudson) is interested in hearing from potential contributors and participants about other possible application areas.

Third International Congress on the Teaching of Statistics, ICOTS III, 19-24 August, 1990

ICOTS III, the Third International Congress on the Teaching of Statistics, will take place at the University of Otago, Dunedin, New Zealand between 19th and 24th August 1990. The language of the Congress will be English.

The organizers of Congress Section B5 which focuses on the theme 'Teaching Statistics and Econometrics to University Students of Economics and Business' are arranging a program of invited papers and contributed papers. They are now soliciting contributed papers on the above theme, to be presented at the Congress either orally or by way of a poster session.

Papers may be on any topic related to the theme of the Section, and may relate to the teaching of statistics or of econometrics as individual disciplines. Any aspect of econometrics teaching may be addressed, though it is desirable that at least some reference be made to statistical issues.

Intending contributors are asked to indicate their interest *before 31st December 1989* by sending a preliminary title and abstract (in English) to either of the Section organisers, whose names are given below.

A contributor whose work is accepted for oral presentation must prepare a written version of the full paper for distribution at the Congress. A contributor whose work is accepted for poster presentation must attend the poster session in person or delegate someone else familiar with the work to attend.

Send preliminary abstracts and any requests for further information to either of the organisers for Section B5:

Dr Lucette Carter, UFR de Sciences Economiques, Universite de Paris X, 200 Avenue de la Republique, 92001 Nanterre, France. Fax +33 (1) 4097 7571; E-mail Carter@frmeu51.bitnet or

Dr Eric Sowey, Dept of Econometrics, University of NSW, PO Box 1, Kensington, NSW 2033, Australia. Fax +61 (2) 662 8845; E-mail 64B1100@cstdvx3.accu.csd.unsw.oz

OVERSEAS CONFERENCES

Winter Simulation Conference, 4--6 December 1989, Washington, DC, USA.

Information: Kenneth J. Musselman, Pritsker & Assoc., Inc., 1305 Cumberland Ave., P.O. Box 2413, West Lafayette, IN 47906, USA.

45th Conference on Applied Statistics, 4-8 December 1989, Atlantic City, NJ, USA.

Information: Robert Welch, 76 Henderson Rd., Kendall Park, NJ 08824, USA.

Sixth Annual Conference on Criminal Justice Statistics, 7--8 December 1989, New York, NY, USA.

Information: Lily E. Christ, Math. Dept., John Jay Coll. of Criminal Justice, CUNY, 445 W.59th St., New York, NY 10019, USA.

Boston Celebration of the ASA150 Sesquicentennial, 9 December 1989, Boston, MA, USA.

Information: Jimmy Efir, Dept. of Health Policy & Mgmt., Harvard Univ., 677 Huntington Ave., Boston, MA 02115, USA.

ASA Winter Conference, 4--6 January 1990, Orlando, FL, USA.

Information: ASA, 1429 Duke St., Alexandria, VA 22314-3402, USA.

IEEE Computer Society COMPCON Spring '90, 26 February-2 March 1990, San Francisco, CA, USA.

Information: COMPCON Spring '90, Computer Society of the IEEE, 1730 Massachusetts Ave., Washington DC 20036-1903, USA.

U.S. Bureau of the Census 1990 Annual Research Conference, 18-21 March 1990, Arlington, VA, USA.

Information: Maxine Anderson-Brown, Office of the Director, Bureau of the Census, Washington, DC 20233, USA.

International Conference on Law, Statistics, and Probability, 2--4 April 1990, Edinburgh, Scotland, UK.

Information: C.G.G. Aitken, Dept. of Statistics, The King's Bldgs., Univ. of Edinburgh, Mayfield Rd., Edinburgh, EH9 3JZ, UK.

44th Annual Quality Congress, 14--16 May 1990, San Francisco, CA, USA.

Information: Shirley A. Halladay, American Society for Quality Control, 230 W. Wells St., Milwaukee, WI 53203, USA.

22nd Annual Conference on Statistics, 28 May-1 June 1990, Tours, France.

Information: J-P. Asselin de Beauville, Laboratoire d'Informatique, Faculte des Sciences et Techniques, Parc de Grandmont, 37 200 Tours, France.

International Conference on Bootstrapping and Related Techniques, 4-8 June 1990, Trier, West Germany.

Information: PD Dr. K.-H. Jockel, Bremen Inst. for Prevention Research (BIPS), St. Jurgen-Str. 1, 2800 Bremen 1, West Germany.

World Organization of Systems and Cybernetics 8th International Congress, 11--14 June 1990, New York, NY, USA.

Information: Constantin V. Negoita, Congress Chairman, Dept. of Computer Science, Hunter College, CUNY, 695 Park Ave., New York, NY 10021, USA.

7th Annual Quality and Productivity Research Conference, 13--15 June 1990, Madison, WI, USA.

Thomas J. Snodgrass, Dept. of Engineering Professional Development, 801 Extension Bldg., Univ. of Wisconsin, Madison, WI 53706, USA.

XVth International Biometric Society Conference, 2-6 July 1990, Budapest, Hungary.

Information: XVth Secretariat Ms Eva Sos, Computer and Automation Inst., Hungarian Acad. of SCI, P.O. Box 63, H-1502 Budapest, Hungary.

1990 Joint Statistical Meetings, 6--9 August 1990, Anaheim, CA, USA.

Information: ASA, 1429 Duke St., Alexandria, VA 22314-3402, USA.

7th International Conference on the New Quality Philosophy in Statistical Research and Statistical Education, 6-9 August 1990, Anaheim, CA, USA.

Information: V. Shvyrkov, IS-SSE, 536 Oasis Dr., Santa Rosa, CA 95407, USA.

Institute of Mathematical Statistics 53rd Annual Meeting & 2nd World Congress of the Bernoulli Society, 13--18 August 1990, Uppsala, Sweden.

Information: Uppsala Turist & Kongress AB, "Bernoulli Society", Box 216, S-751 04 Uppsala, Sweden.

International Congress of Mathematicians, 21--29 August 1990, Kyoto, Japan.

Information: ICM-90 Secretariat, Research Inst. for Math Sciences, Kyoto Univ., Kitashirakawa, Sakyo, Kyoto 606, Japan.

2nd International Conference on Environmetrics, 27-30 September 1990, Como, Italy.

Information: A.H.El Shaarawi, National Water Research Inst., PO Box 5050, Burlington, ON, Canada L7R 4A6, Canada.

34th Annual Fall Technical Conference, 18-19 October 1990, Richmond, VA, USA.

Information: Rick Lewis (ASQC-SD), Union Carbide Corp., 3200 Kanawha Turnpike, S. Charleston, WV 25303, USA.

International Conference on Measurement Errors, 11-14 November 1990, Tuscon, AZ, USA.

Information: Lee L. Decker, ASA, 1429 Duke St., Alexandria, VA 22314-3402, USA.

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