statistical society of australia

newsletter

31 march 1990 number 50

RESEARCH FUNDING FROM THE AUSTRALIAN RESEARCH COUNCIL (ARC)

Annette Dobson

Newcastle University

The ARC grants scheme and its predecessors have traditionally been a major source of funds for research Statistics in tertiary institutions. Other sources include the National Health and Medical Research Council and Australian Government Departments, such as Industry, Trade and Commerce.

ARC small grants are now determined internally by most Universities, but assessment of larger grants is organised by the ARC itself. Grants are handled by several committees covering special grants (eg Queen Elizabeth II and other fellowships) or discipline areas (eg biology, social sciences, or physical sciences). Statistics applications are most likely to be handled by the Physical Sciences panel which covers mathematics, physics and chemistry.

The Physical Sciences panel works as two subgroups, one handling Chemistry and the other Mathematics (including Statistics) and Physics. Until recently the second group consisted entirely of physicists with interests ranging from experimental to mathematical physics. From 1988 Gavin Brown, Professor of Mathematics at the University of New South Wales, joined the group and in 1989 I did. Panel members do not represent their own disciplines, but hopefully provide specific expertise, for example in selecting appropriate assessors to review applications.

The following comments are based on my limited experience of one year as a member of the Mathematics and Physics group of the Physical Sciences panel.

When grant applications are received in Canberra the first stage is for the Panel to suggest assessors. One or more are chosen from among those nominated by the applicant(s) and several others from Australia and overseas are also selected. Some have specific expertise related to the project and others are chosen to provide a broader perspective. Assessors are asked to rate both the project, on its importance and likely outcome, and the applicant(s), on track record. (In 1990 reports from the assessors selected by the applicants will be sought earlier in the process). Advice from the assessors is the major determinant of success or failure; the discipline panels, the ARC itself and the Government act primarily on this advice and support those applications which are graded most highly.

Some applicants may be interviewed, but this is not a sign of favour or disfavour — it just means that panel members thought they needed more information. There is considerable pressure to reduce interviewing in order to cut costs.

The amount of money granted to successful applicants is intended to enable the work to be carried out for as many highly graded projects as possible. Therefore, some applicants are awarded all they ask for and some have more luxurious or less important items removed from their budgets.

What do statisticians and mathematicians ask for? Usually research assistance (or research assistants), research visitors and workstations are requested. SUN suppliers must be major beneficiaries of ARC!

What distinguishes successful applications from failures? Basically, the successful ones state clearly what the research questions are and explain how they are going to be tackled. Vague applications cannot be properly assessed and invariably score poorly. Vagueness suggests that the applicants have not thought adequately about the research question, do not know the literature or are insufficently familiar with approaches and methods which are most likely to be fruitful. The assessors are experts in the field, not lay people, and they are unimpressed by "snow jobs".

Applications involving mainly developmental aspects of R and D projects are not generally regarded as appropriate for ARC and are unlikely to be supported because there are alternative sources of funds available. Scientific projects with commercial potential are quite acceptable, but if little detail of the work is provided on the grounds of commercial confidentiality they may be difficult to assess.

A summary of the outcomes of initial applications (not renewals) in 1989 handled by the Mathematics and Physics group of the Physical Sciences Panel is given in the Table. Some arbitrariness was involved in the categorisation of applications by discipline; where should the division between theoretical physics and mathematics be made? Also the classification of successes and failures was occasionally misleading when an applicant submitted two related applications, one of which was not funded but the other was funded sufficiently to cover also some items from the unsuccessful application. It is important to remember that Physics covers a very wide range of activities, from building and maintenance of large scale telescopes to theoretical work on particle physics. Therefore the amounts of money requested and granted

are, on average, greater in Physics than in Statistics or Mathematics.

The most striking features of the Table are the relatively small numbers of applications in Statistics (or Mathematics) but their relatively high success rates. Hopefully this information will encourage more research workers to apply and be successful in obtaining ARC support.

Summary of outcomes of ARC initial applications for research funds submitted in 1989 handled by the Physical Sciences Panel

	Stats.	Maths.	Phys.
Number of applicants	22	48	128
Number successful	14	26	48
Percentage successful	64%	54%	38%
Amounts granted for 1990 to successful applications ($,000)			
Mean	28.6	28.3	50.8*
Maximum	55	63	144*
Minimum	11.5	5	15
Amounts granted as % of amounts requested for 1990 (successful applicants only)			
Mean	65%	63%	67%
Maximum	100%	100%	100%
Minimum	39%	35%	22%*

* Not comparable with amounts requested or received for Statistics or Mathematics due to much larger needs for equipment and maintenance (for example, for radio telescopes).

BRANCH REPORTS

Victoria

VCE Results — Marks or Grades?

Daryl Daley (ANU) addressed the 24th October meeting on some Statistical aspects of examinations and other assessment marks, particularly relating to VCE. The nature of the mark, given as a score out of 100, was discussed and the size of measurement error compared with the standard deviation of the set of marks. The nature of the current method of combining subject marks to arrive at a mark for tertiary entrance was outlined. It was demonstrated that using the first factor in a principle components analysis amounts to the same as using a single factor model. It was also shown that, for a single subject, 10 to 20 grades are distinguishable. Using these grades and retaining an additional significant figure leads to using a scale of 100.

Statistical Ideas from Epidemiology

Ian Gordon of the Statistical Consulting Centre at The University of Melbourne spoke to over 50 members at the 28th November meeting about Statistical Ideas from Epidemiology. Ian has taught epidemiology and statistics and worked on the Health Watch project in the Department of Community Medicine for several years. The contributions of statistics to epidemiology, and of epidemiologists to statistical theory, formed the basis of his clear and thoughtful talk.

Nineteenth century statisticians, such as Farr in England and Archer in Melbourne, worked on data relating to the health of human populations and as such were practising epidemiology. More recently epidemiologists such as Miettinen and Rothman have suggested methods for statistical decision making, and offered opinions on the current application of statistics. (Definition of a point estimate: a 0% two-sided confidence interval!) Their viewpoints have been influenced by the need to present

findings in a way that non-statistical epidemiologists can readily comprehend, and by facing up to the practical issues involved when conducting epidemiological studies of multifactorial diseases in human populations from which important decisions must be made. In particular the p-value function, "test-based" confidence intervals and some opinions on multiple testing were discussed. Although some of the theory was shown to be patently wrong, most is at least contentious or thought provoking. Ian demonstrated how our understanding of statistical theory can be enhanced through consideration of these concepts, even though our confidence in its application might be somewhat shaken. "Are we all Bayesians at heart?", he surmised.

South Australia

The Analysis of Warranty Data

On October 31st, the Branch was addressed by Brenton Dansie, South Australian Institute of Technology, on work that he undertook during a recent period of study leave spent in the Warranty Department of Mitsubishi Motors Australia Limited in Adelaide.

A description of the type of warranty data collected and the methods of its presentation were given. Some of the problems with analysing warranty data were outlined and some work on the analysis of life time data that he did for the company were presented. In addition, some thoughts on the role of statisticians within companies such as Mitsubishi Motors Australia Limited were given.

Jackknife for show, bootstrap for dough or using the bootstrap in practice

On November 15th, the Branch was addressed by Nick Fisher, CSIRO Division of Mathematics and Statistics, Sydney.

The bootstrap resampling method is arguably the most important methodological innovation in Statistics in the last 10 years, and is now quite widely used. Unfortunately, naive application of the bootstrap can lead to very poor results — no better, in fact, than would be obtained by using large-sample methods. However, by following some simple principles, the bootstrap does indeed yield excellent results in a wide range of problems.

In this talk, which described some joint work with Peter Hall, some of these principles were explicated in the context of a few problems arising in the statistical analysis of directional data. In one of these problems, the bootstrap appeared to offer the only method of solution, even with large sample sizes.

Barbecue

An End of Year Barbecue and Wine Bottling was held on Sunday 10th December at Rosemary and John Field's house. We bottled a Coriole 1987 Shiraz from the McLaren Vale region of South Australia.

The CSIRO Image Analysis Project

On February 7th, the Branch was addressed by Mark Berman, CSIRO Division of Mathematics and Statistics, Sydney. Mark is the Project Leader of the Image Analysis Project.

The CSIRO Image Analysis Project, based in Sydney, has been in formal existence since 1985. Since that time, members of the Project have tackled a variety of mathematical and statistical problems arising from digital image data using techniques drawn from the fields of mathematical morphology, spatial point processes, multivariate analysis, time series analysis and non-parametric regression. A number of the problems were outlined.

A major problem with image data is its sheer size, especially remotely sensed image data where "sample sizes" are typically well over 100,000! The application of the above-mentioned statistical techniques to such large 2D data sets has necessitated the development of a specialised software package, called Z. Some aspects of Z were briefly described.

Western Australia

Automatic Smoothing and Differentiation

The November meeting of the branch was held on Tuesday, 14th in Blakers Lecture Theatre at UWA. Theo Gasser of Mannheim/Heidelberg, Germany, addressed the meeting and presented a talk on the topic above. The abstract of the speach was:

"Nonparametric curve estimators have become popular and kernel estimators provide a flexible class of estimators in this frame-work. Here, estimation of a regression function r or its derivation r', r'' for data Y_1 is considered: $Y_i = r(t_i) + e_i$ ($i = 1, ..., n$). The crucial choice of the smoothing parameter or bandwidth depends on the data at hand. A subjective choice is scientifically questionable, and may also be suboptimal as well as uneconomical. A data adaptive optimatization of the bandwidth by cross-validation has frequently been suggested but is rather variable. We propose a different approach, based on approximating the asymptotic optimal bandwidth in an iterative algorithm. This method has good theoretical properties, fares well in simulation and is fast."

Workshop on STATISTICS IN DIABETES RESEARCH

UWA Department of Mathematics, in conjunction with the WA Branch of the SSA, held a one-day workshop on this theme, on Thursday, November 30, 1989 at UWA. The keynote speaker was Professor Niels Keiding from University of Copenhagen, Denmark; who presented two 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".

There were several additional speakers — Dr T. Welborn, Dr H. Kelly, Dr M. Knuiman, Ms D. Whittall, Prof. R. Boston, Prof. T. Brown, Mr N. De Klerk, Dr A. Wood, A.Prof. I. James and Dr A. Senthilselvan. They presented talks on descriptive epidemiology, applications, methodology, etc. Assoc. Prof. Ian James and Dr Matt Knuiman were responsible for organising such a successful workshop. There were about 60 participants.

Annual General Meeting

The AGM of the WA Branch was held at UWA Maths Common Room on December 12, 1989. The following Executive Committee was elected to serve during 1990:

President: Prof. Tim Brown, Dept. Mathematics, UWA

Vice President: Dr Matt Knuiman, Dept. Medicine, UWA

Secretary: Dr S. Ganeshanandam, Sch. Maths & Stats,
              Curtin University

Treasurer: Mr Mario D'Antuono, Biometrics,
              WA Dept. of Agriculture

Committee: Mr Pat Fitzgerald, WA Health Dept.
              Dr Geoff Riley
              Dr Brenden Clarke, Murdoch University.

The AGM was followed by drinks and dinner to wind up the activities of the Branch for 1989.

The Branch's first meeting for 1990 will be held on Tuesday, March 12th.

NEWS ABOUT MEMBERS

Illawarra Statistical Group met on three occasions in the second half of 1990. This informal group, consisting of a diverse group of people from the Illawarra region (the region around Wollongong), NSW, heard Dr van Uu Nguyen of the Department of Civil and Mining Engineering at Wollongong University, speak on applications of fuzzy set theory. A subsequent talk was given by Dr Nick Fisher, of CSIRO DMS, who spoke "On the Application of Some Computer-Intensive Statistical Methods in the Earth Sciences". Finally, in November we heard from Barrie Stokes and Dr Frank Tuyl, who described some of their work on Statistical Quality Assurance at BHP, Newcastle. A more extensive programme of talks is planned for 1990.

Thanks to a persuasive promotional campaign by Dr Chandra Gulati of the University of Wollongong, more than ten new members for the Statistical Society of Australia were signed up late in the year.

Data Analysis Workshop

The first Data Analysis Workshop, supported by DITAC (Department of Industry, Technology and Commerce) and sponsored by the Consortium for Research in Computer Intensive Statistical Methods, was held at the ANU in early February. The purpose of the workshop was to consider the analysis of covariance structures from both theoretical and practical view points. Covariance modelling is used widely — in economics, psychology, psychiatry, education, in fact in any subject where latent trait models, linear structural relations or path analysis are relevant.

The keynote speaker was Professor Brian Everitt from the London Institute of Psychiatry. Each day began with an address by Professor Everitt who provided an overview of the subject and discussed difficulties which arise in fitting such models to data.

On day 1, three statistical packages were demonstrated — COSAN, EQS and LISREL. The first of these, COSAN, is an Australian package designed by Professor R.P. McDonald, School of Education, Macquarie University. On days 2 and 3, talks were given by the workshop participants. A month or more before the workshop, a data set from a four panel study designed to examine the relationship between 'minor' psychiatric illness, personality, adverse life events and social support in the community, was made available to participants. This formed the basis of a number of the talks. Other speakers outlined other research projects, discussed an approach to modelling complex data sets, raised the question of goodness of fit and how it should be assessed, and looked at latent trait models for categorical data.

The participants (about 25 in number) were statisticians and non-statisticians — economists, educationalists, psychologists, psychiatrists. They came from Australia and overseas — Egypt, Israel, New Zealand and U.K. This mix of participants produced lively discussion, and a very useful three days.

The organiser was Sue Wilson, ably supported by Yvonne Pittelkow from the School of Social Sciences and Andrew McKinnon from the Social Psychiatry Research Unit at the ANU. We enjoyed excellent food, lively conversation and came away considerably wiser about latent trait and associated models. Perhaps the most useful outcome was the development of a network of people working on similar problems.

Ann Eyland
Macquarie University

VISITORS

Professor K.L. Chung; Stanford University; 21 March - 14 April 1990; Melbourne University, Statistics Department; Dr Fima C. Klebaner.

Professor J. Cohen; Rockefeller University; 5 - 19 September 1990; Melbourne University, Statistics Department; Dr Fima C. Klebaner.

Dr Nicola Crichton; Exeter University, England; medical statistics; 1 July 1989 - 30 June 1990; Monash University; Professor P.D. Finch.

Professor J.M. Gani; Santa Barbara, California; wife; stochastic modelling, probability; September 1989 - August 1990; Australian National University, Department of Statistics; Professor C.R. Heathcote.

Professor R.H. Jones; University of Colorado Health Sciences Center; wife with 2 children; time series and epidemiology; September 1989 - 30 June 1990; Australian National University, Department of Statistics; Professor C.R. Heathcote.

Professor K. Kesten; Cornell University; 22 May - 17 June 1990; Melbourne University, Statistics Department; Dr Fima C. Klebaner.

Professor D. Schafer; University of Oregon; generalised linear models; 17 September 1989 - 17 September 1990; University of Western Australia; A/Professor I.R. James.

OBITUARY

Dr Francis Emeric (Imre) Binet was born in Budapest, Hungary on the 3rd of May 1913. His father, Dr Bela Binet, was a physician and it was natural that Emeric should enrol in the medical faculty of the University of Budapest. He was a brilliant, though somewhat eccentric, student, and although he became a medical doctor in 1936, he felt no inclination to become a practising physician. He enrolled again in the University to study biological science and statistics and then embarked on a PhD project in the laboratory of Nobel Laureate Albert Szentgyorgyi in Szeged. Throughout these years he kept a close friendship with the vigorous young mathematical community then thriving in Budapest, in particular with Paul Erdos, Paul Turan and Tibor Gallai, all of whom later became renowned mathematicians.

His PhD work came to an abrupt end with the outbreak of World War II, and Emeric migrated to Australia to settle in Adelaide in 1940. He married and moved to Melbourne where he become a Senior Tutor in the Statistics Department of the University of Melbourne under Professor M.H. Belz. The marriage did not last. In 1956 he joined the CSIRO as a statistician at the Poultry Research Centre in Werribee, Victoria, and later at the Division of Animal Genetics in North Ryde, NSW. While still in Werribee, he was involved in a bad car accident which unfortunately deprived him of a fully productive scientific life. His condition gradually deteriorated and for the last year of his life he was confined to a wheelchair. He died on the 9th November 1989.

With all his eccentricities Emeric was an impressive person, equipped with a remarkable memory and mental capacity only slightly impaired by his accident. He was greatly interested in the philosophical and epistemological aspects of statistical theory and mathematics, an inclination which sometimes showed through his papers. He was a strong walker and was fond of taking long walks in the mountains even after his accident. Once he got lost on Mount Donna Buang and spent a wintry night in the open, without suffering any harm. He was an active member of the Statistical Society of Australia and the Australian Mathematical Society, and was a well known figure at their meetings, shuffling in towards the end of a lecture, just in time to ask the lecturer an awkward question. With his departure, Australian Mathematics and Statistics have lost a colourful personality.

The list of publications below is probably not complete.

G. Szekeres
J.B. Douglas

1. The fitting of the positive bionomial distribution when both parameters are estimated from sample", *Annals of Eugenics*, 18, (1953) 117-119.

2. (With H.T. Clifford) "A quantitative study of a presumed hybrid swarm between Eucalyptus Elaeophora and E. Goniocalyx", *Australian Journal of Biological Science*, 2(3), (1954) 325-336.

3. (With R.T. Leslie, S. Weiner and R.L. Anderson) "Analysis of confounded factorial experiments in simple replications", *Technical Bulletin, Agricultural Experiment Station, University of North Carolina*, 113, (1955) 1-64.

4. (With J.H. Bennett) "Association between Mendelian factors with mixed selfing and random mating", *Heredity*, 10, (1956) 51-55.

5. (With G.S. Watson) "Algebraic theory of the computing routine for tests of significance on the dimensionality of normal multivariate system", *J. Roy. Stat. Soc. Ser. B*, 18 (1956) 70-78.

6. (With B. Hudson) "The accuracy of eosinophil counts", *Australian Journal of Experimental Biology and Medical Science*, 34, (1956) 479-483.

7. (With T.J. Robinson and Alison G. Doig) "Fat lamb studies in Victoria I", *Australian J. Agric. Res.*, 7, (1956) 345-365.

8. (With G. Szekeres) "On Borel fields over finite sets", *Annals of Maths. Stats.*, 28, (1957) 494-498.

9. "Heredity counselling for sex-linked recessive deficiency diseases", *Annals of Human Genetics*, 22, (1958) 144-152.

10. (With R.T. Leslie) "The coefficient of inbreeding in case of repeated full-sib-matings", *J. of Genetics*, 57, (1960) 127-130.

11. (With J.A. Morris) "On total hereditary variance in the case of certain mating systems", *J. Genetics*, 58, (1963) 108-121.

12. "On total additive genetic variance in the case of certain mating systems", *Journal of Genetics*, 58, (1963) 252-270.

13. "An instance of interaction of genotype and environment at the population-level", *XI International Congress of Genetics, The Hague*, (1963), Section 9, 9. 12.

14. "On the construction of an index for indirect selection", *Biometrics*, 21, (1965) 291-299.

15. "The generalization of the frequency function of the hypergeometric distribution" (*in Hungarian*), *MTA (Hungarian Academy of Sciences) III* Oszt. Kozl., 18 (1968) 137-146.

16. (With Moikazu Shikata) "Approach to homozygosity at autosomal and at sex-linked loci, under repeated full-sib-mating", *Japan J. Breed.*, 21 (1971) 93-99.

17. (With H. Daday, A. Grassia, J.W. Leak) "The effect of environment on heritability and predicted selection response in Medicago Sativa", *Heredity*, 31 (3) (1973) 293-308.

18. Letter to the Editor, *Austral. J. Stat.* 16, (1974) 474 (corrigendum 20 (1978) 87).

19. (With J.M. Rendel) "The effect of environment on heritability and predicted selection response: A reply", *Heredity*, 33 (1974) 106-107.

20. "Fitting the negative binomial distribution", *Reader Reaction, Biometrics* 42, (1986) 989-992.

MISCELLANEA

Applications in AJS

Australian statisticians have always been oriented towards the applicability of their discipline with a healthy interaction between new areas/problems of application and the development of new statistical theory and maodels. The applications section of *AJS* should reflect this strength of Australian statistics as well as incorporate similar papers from authors in other countries.

Currently there are far too few submissions to the applications section. Certainly such papers should not be merely routine applications — there should be some novelty, either in the data or in the way statistical method is applied. Yet there must be a considerable amount of applied work which conforms to these specifications. An interesting set of applied publications can be produced only when the editorial panel can select from a pool of quality research. I invite you to submit your best work to *AJS*.

C.A. McGilchrist
Editor, *AJS*

New Journal "Statistical Theory and Applied Research"

The Soviet-French-Italian joint venture "Interquadro" is organizing the publication of a journal in mathematical statistics and its applications which will come out in English. This intention is brought about by the fact that "Interquadro" is engaged in electronic data processing and statistical data analysis research.

Statistical Theory and Applied Research is supposed to come out quarterly starting from 1991.

It will publish articles and reviews on important problems of statistical inference theory as well as papers dealing with data analysis, various applications of mathematical statistics and statistical analysis software.
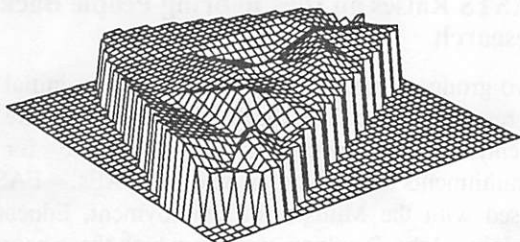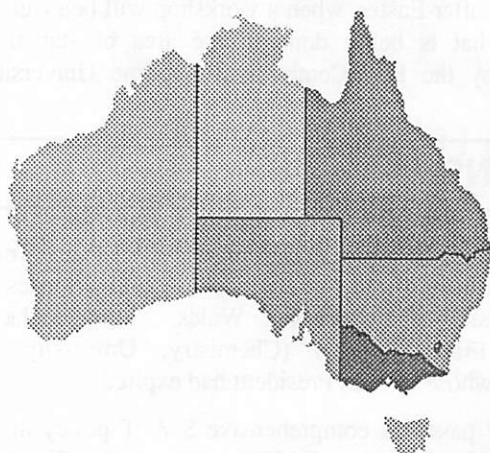
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Alexander V. Pavlyukov
Head of Advertising and Publishing Department
Interquadro
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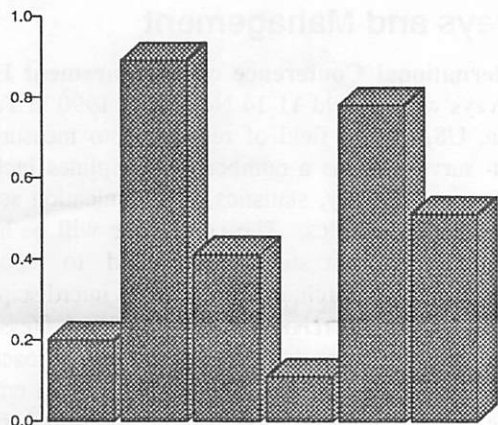
SPECIAL INTEREST SECTIONS

Industrial Statistics

Industrial Experimentation Workshop

Following the 10th Australian Statistical Conference/2nd Pacific Statistical Congress in July, Professor George Box is staying on in Australia to present a one-day workshop on Industrial Experimentation. The workshop, which is entitled "An Explanation and Critique of Taguchi's Contributions to Quality Engineering", will be held in Sydney on July 9 and in Melbourne on July 13. Further details and a registration form will be made available in the next SSA Newsletter. Enquiries may be directed to: Mary Willcox, CSIRO, DMS, PO Box 218, Lindfield NSW 2070, (02) 413-7571

Statistical Education

The interest in Statistical Education amongst academics in Victoria continues to remain at a pleasing level. A network of interested people was set up in 1989, and we were particularly pleased to see colleagues from as far afield as Ballarat and Gippsland join their Melbourne counterparts in several meetings. At a meeting in December, the topic of using computers to teach Statistics was discussed. The next meeting is scheduled for the Wednesday after Easter, when a workshop will be given to illustrate what is being done in the area of statistical education by the Key Centre at Melbourne University.

Further details are available from Nick Garnham at Swinburne Institute of Technology.

It is expected that a session on Statistical Education will be held at the 10th Australian Statistical Conference in Sydney in July. We hope to see you there. And don't forget ICOTS 3 in Dunedin, New Zealand in August.

Surveys and Management

An International Conference on Measurement Errors in Surveys will be held 11-14 November 1990 in Tucson, Arizona, USA. The field of research into measurement erros in surveys spans a number of disciplines including sociology, psychology, statistics, communication science, business and economics. The conference will be held to document the current state of the field, to report the findings of new research, and to promote interdisciplinary and cross-cultural interchanges. It will bring professionals together from different disciplines to share approaches to modelling, assessing, and reducing measurement errors in surveys. The conference is jointly sponsored by the American Statistical Association, the American Association for Public Opinion Research, the American Marketing Association and the International Association for Survey Statisticians. If you want further information about the conference, contact Dennis Trewin on (062) 526051 or write to him care of the Australian Bureau of Statistics, PO Box 10, Belconnen ACT 2616.

FASTS NEWS

FASTS has elected a new President. He is Professor Tony Wicken, Dean of Biological and Behavioural Sciences at the University of New South Wales. Tony replaces Professor Frank Larkins (Chemistry, University of Tasmania) whose term as President had expired.

The ACTU passed a comprehensive S & T policy at its September Conference. FASTS, through its Observer Member Societies, the CSIRO Officers Association and FAUSA, played a leading role in the development of the policy. The policy calls for improved career opportunities for scientists and technologists and greater resources for education.

There are to be two new Councils within FASTS; the Australian Mathematical Sciences Council and the Biological Council of Australia. These discipline areas are hoping to imitate the highly successful Australian Geoscience Council in focussing support for their disciplines.

Women and Mathematics, Science and Technology

FASTS has established a high-level committee to look at the issue of a projected short fall in personnel in key areas of mathematics, science and technology. One of the committee's areas of focus will be the encouragement of

trained women back into the workplace and developing the talent of more young people.

FASTS meets with Senior Canberra Public Servants

In a series of meetings FASTS President, Vice-Presidents and Executive Director met with senior Officers in the Departments of Prime Minister and Cabinet, Industry Technology and Commerce, and Employment Education and Training. These talks were aimed at increasing communication between FASTS and the bureaucracy; finding out what is feasible in their view and what is acceptable in ours.

FASTS Raises an Idea to bring People Back to Research

Two groups of people, often with excellent initial training in research, have lost touch with it. They are women scientists who have left the workforce for family commitments and some people in CAEs. FASTS has raised with the Minister of Employment, Education and Training, John Dawkins, ways in which these people could revitalise their research skills.

Australian Mathematical Sciences Council

A number of Societies involved in mathematics are Member Societies of the Federation of Australian Scientific and Technological Societies (FASTS). Between them they are entitled to a Board member on FASTS. Through this Board member they can put the views of the mathematics community to the wider science and technology lobby. But what are those views and how can they be obtained?

The Australian Geoscience Council was the model the Societies looked at. It has about 25 organisations represented and holds two meetings a year of those societies and has a small Executive Committee which meets more frequently. FASTS sends an observer to each of the Council and Executive meetings. In this way FASTS can brief the geoscientists on what it is doing and the geoscientists can indicate their views.

But won't it cost more? Societies are presently paying $3.50 per member to FASTS each year. Initially an extra

$1.50 will go towards running the Australian Mathematical Sciences Council. However if the new Council attracts Societies not presently in FASTS, then the costs should actually come down.

The real beauty of the council is that it can look at mathematics as a whole from kindergarten to research; from school to the work-place. In a period of rapid change in the use of calculators and computers, the Council will be able to focus on issues like skill formation in mathematics. What do we need to be able to do? What can we safely leave to machines?

As well as influencing FASTS, the Council will be able to speak out on its own for mathematics on issues such as differential salaries for mathematicians, or does mathematics get its fair share of research funds?

The Council is also in a better position than individual societies to influence parents, industry, the Academies and government. It is definitely worth the price of one beer per member a year.

FASSO NEWS

On 30 November 1989, the Annual General Meeting of the Federation of Australian Social Science Organisations elected Dr Leo Bartlett, President; Dr Terry Stokes, Vice-President; Dr John Bowden, Secretary; and Dr Elspeth Young, Treasurer. It also considered the following:

Appointments to Australian Research Council (ARC)

Early in 1989 the Minister for Employment, Education and Training had proposed that the nexus between Chairs of Discipline Panels and Council membership be broken. Following strong representation on this issue, the Minister called a meeting of representatives of Academy of Science, Academy of Technological Sciences and Engineering, Academy of Social Science, Academy of Humanities, Institution of Engineers, Australian Vice-Chancellors' Committee, Australian Committee of Directors and Principals, Federation of Australian Social Science Organisations, and proposed their involvement in recommending appropriate appointments. As reaction was mixed, the Minister decided to establish a nominating committee to advise him on suitable persons for appointment to the ARC chair, six 'academic' positions on the ARC and four discipline panel chairs. A representative from each of the above organisations and from the Council of Australian Postgraduate Associations forms this committee. Following the first meeting, (in October) which considered four of the above positions that were then vacant, Professor Sheehan was appointed to the Chair of the Social Sciences and Humanities Discipline Panel, Professor Rigby to the Chair of the Engineering, Earth and Applied Sciences Discipline Panel, and both to Council.

The Executive has been contacting member organisations to elicit their recommendations for possible candidates so FASSO can to respond quickly to vacancies as they occur.

Classification of Research Categories

Recently there had been a review of the ARC classification to which FASSO had responded after contacting its member organisations. Realising that a rationalisation of its research data collecting activities was needed, the government approached ABS to update the ABS scheme. FASSO is concerned about the unequal level of aggregation used in these taxonomies and the intended use of these classification schemes.

ARC Research Grants and changes to funding for small grants

Decisions on grants for 1990 were made in late 1989. Of a total of 1216 grants, 24% were in Social Sciences and Humanities, accounting for 17% of the total funding. Comparing 1990 with previous years is difficult because distribution of 'small grants' (up to $15,000 in Humanities, Social Sciences and Mathematics and up to $25,000 in other fields) has been devolved to the higher education institutions, five Priority Areas provided for, and special 'large equipment' grants being given to two universities.

How individual institutions are handling their small grants applications is not known. The November 1989 FASSO Newsletter discussed the formula by which the amounts for small grants are given to individual institutions is fixed and so cannot accommodate relative changes across institutions in numbers of high quality applications.

FASSO is concerned with the frequent unannounced changes in ARC procedures made without consultation with all representative research bodies. The FASSO Executive to establish a mechanism for the development of position papers on most issues of research policy.

Sue Wilson
FASSO Representative

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

Conference of Commonwealth Statisticians, 10 - 18 April 1990, Australian Bureau of Statistics. Mr D. Trewin, ABS, PO Box 10, Belconnen ACT 2616.

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 Newsletters 48, 49 and this issue.)
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 Newsletters 48 and 49.)
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 Newsletters 46, 49 and this issue.)

Conference of Commonwealth Statisticians, 10 - 18 April 1990
The Australian Bureau of Statistics will be hosting the 5-yearly Conference of Commonwealth Statisticians in Canberra. Participants are expected from the majority of Commonwealth countries. Most countries are represented by the head of the government statistical service. The previous two Conferences have been held in United Kingdom and Kenya.

Topics for discussion include:
. Management and planning of statistical offices
. Uses of population census data
. Business statistics
. Applications of new technology
. Statistics for health care
. Statistics for small groups
. Technical co-operation.

10th Australian Statistical Conference, 2nd Pacific Statistical Congress, 2 - 6 July 1990
The Registration Brochure for the 10th Australian Statistical Conference/2nd Pacific Statistical Congress, to be held at the University of New South Wales from July 2 to 6, has been distributed. Members of the Society are urged to submit their registrations — remember that a discount is available if payment is made before May 1.

The programme is shaping up to be a very exciting one. Professor George Box has indicated his willingness to give two major addresses — one as part of the Quality component of the conference on July 3, and the other to mark the centenary of Fisher's birth. In addition, Professor Box will present a one day workshop on Industrial Experimentation in Sydney on July 9 and in Melbourne on July 13. A notice about these workshops appears elsewhere in this issue.

Notice also appears in this issue of the workshop on statistical modelling of AIDS and other epidemics, to be held on the weekend prior to the Conference. A session on medical statistics, featuring the keynote speakers from the workshop, will occur on the first day of the Conference, July 2.

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.

Third International Congress on the Teaching of Statistics, ICOTS 3, 19 - 24 August 1990

ICOTS 3, 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.

At ICOTS 3 teachers from all over the world and from all levels of the educational system will have an outstanding opportunity to make themselves familiar with international developments in the teaching of statistics. The programme will include the following special themes:

. Statistics in upper secondary schools.
. Statistical developments at university and polytechnic level.
. Statistical training for developing countries.
. Use of calculators and computers in the teaching of statistics.
. Training of consultant statisticians for government and industry.
. Raising the general public's statistical awareness and numeracy.
. Social and cultural factors affecting the teaching of statistics.

In terms of statistics education in particular, and mathematics education in general, ICOTS 3 has the potential to be a landmark event for the decades that follow.

The annual NZSA Conference will be held in conjunction with ICOTS 3 in Dunedin on 22 August.

For further information, contact: The Secretary, ICOTS 3 Local Organizing Committee, PO Box 56, Dunedin, New Zealand.

Regional Modelling and Regional Planning, 20-21 September 1990

The Regional Economics Unit, Instutite of Industrial Economics University of Newcastle has issued a call for papers for its conference, Regional Modelling and Regional Planning to be held at the Ambassador Newcastle, September 20-21 1990.

Enquiries should be directed to Programme Organiser, Dr Moira Gordon (049) 685-559, Professor Bob Gibberd (049) 685-689, Coordinator of the Unit, Mr Garry Keating (049) 685-748 or Director of the Institute, Dr Colin Aislabie (049) 685-561 (answering machine).

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Advertising will be carried in the Newsletter on any matters which the Editors feel are of interest to the members of the Society. In particular, advertisements of statistical vacancies, statistical literature and calculators will be welcome. For details of advertising rates etc. contact either the Editors or Dr J.T. Wood at the same address.

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

OVERSEAS CONFERENCES

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.

Survey Design, Methodology and Analysis International Conference, 4-7 July 1990, Colchester, England.
Information: The Institute of Statisticians, 50 Fitzroy Street, London W1P 5HS, England.

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, Sakyoku, 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 in Surveys, 11-14 November 1990, Tucson, AZ, USA.
Paper submission information from Paul Biemer, Department of Experimental Statistics, Box 30003, Dept. 3130, New Mexico State University, Las Cruces, NM 88003-0003, USA; Phone(505) 646-2937. Registration information from Lee L. Decker, ASA, 1429 Duke Street, Alexandria, VA 22314-3402, USA; Phone (703) 684-1221, Fax (703) 684-2037.

International Conference on Industrial and Applied Mathematics (SIAM), 8-12 July 1991, Washington, DC, USA.
Information: SIAM, 3600 University City Science Center, Philadelphia, PA 19104-2688, USA.