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statistical society of australia incorporated

newsletter

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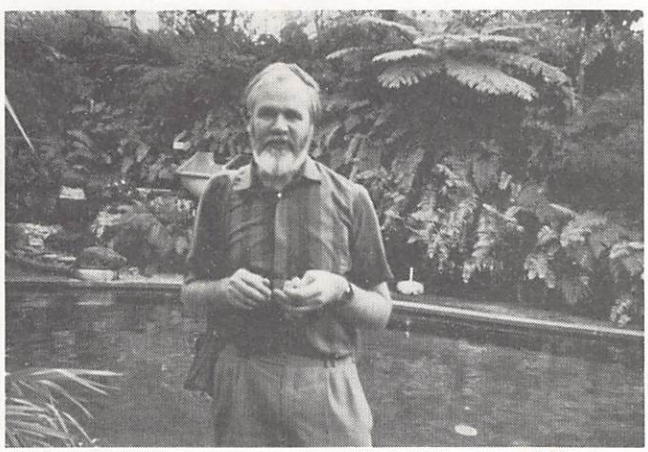
STATCOMP/BIOSTATS 91

A very successful biennial meeting of the Statistical Computing and Biological Statistics Sections of the Statistical Society of Australia was held at Greenmount Hotel at Coolangatta from 1 to 5 July. This was in conjunction with the Biometric Society (Australasian Region), the International Association for Statistical Computing (ISI) and the CSIRO Biometrics Units.

The week started out with perfect weather and delegates enjoying the lush surroundings of the pool at Greenmount Resort. The Secretary of the International Biometric Society, Roger Mead (from Reading University), was only too happy to enjoy the sunshine after the considerably cooler weather of Dunedin in New Zealand and Canberra. As seen from the photograph, Roger was in festive attire as he ate his grapes beside the pool during morning tea.



It appears that the promise of beautiful weather on the Gold Coast in the middle of winter was able to attract about 150 delegates to each of the Statcomp and Biostat programmes, with an overlap of nearly 240 on Wednesday. Unluckily, the clouds did not stay away and there was some rain on Wednesday and Thursday.

Invited speakers in the Statcomp section included Julian Besag (University of Washington), Peter Thomson (Victoria University) and Sandy Weisberg (University of Minnesotta). Unfortunately, Peter Hall (Australian National University) was detained in Canberra due to fog and was unable to enjoy the attractive surroundings at Greenmount. Everyone certainly enjoyed the morning and afternoon teas, not to mention the lavish lunches, provided by the resort. On occasions, a session chair was seen ringing a bell to entice delegates away from the tables and into the conference rooms.

It was felt that some of the sessions in the first half of the week were a little too theoretical, but this was balanced by the greater number of applied papers in the Biostats section. The invited speakers for Biostats were Kaye Basford (University of Queensland), Chris Glasbey (University of Edinburgh), Charles McGilchrist (University of New South Wales), Roger Mead (University of Reading) and Richard Morton (CSIRO Canberra).

On Monday evening, the Welcome Party (sponsored by SUN Microsystems) was well attended. Special thanks must go to the Convenor, Tony Pettit (Queensland University of Technology) and his committee for the flawless organization of both the programme and local activities. By the way, the first drink on the house every evening was an appreciated gesture.

The Central Council met on Tuesday evening in probably the most luxurious surroundings of the past decade.

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Delegates were treated to a light supper amid tables elegantly set with linen napery and sparkling glasses. Only the Secretary, Helen MacGillivray (Queensland University of Technology), was heard to complain when expected to work through the meal. It seems that it was a bit difficult to contribute to the discussion, keep a record of the minutes and eat as well. Tough luck!

Wednesday evening saw 134 people enjoy the Conference Dinner at Oscar's on the Beach, just two minutes walk from Greenmount Resort. We were given a superb meal and only subjected to two short speeches. Our President, Tim Brown (University of Western Australia), wished Richard Tweedie (Bond University) all the best in his forthcoming foray into the University system in the United States.

Unfortunately for the Australian statistical community, their gain is our loss. Gracious as ever, Richard thanked Tim and extolled us to continue to support our Society as vigorously as possible. We would like to congratulate Jason Bull (University of Queensland) for his award for the best paper presented as a lecture by a postgraduate student at Statcomp/Biostats 91. Six student papers were presented and it is hoped that more postgraduates will attend and present papers at subsequent conferences. The Eleventh Australian Statistical conference will be held at Perth in 1992 and all delegates were encouraged to attend. Meanwhile the organizers of the next International Biometrics Conference to be held in New Zealand in December 1992 were also encouraging prospective attendees. They both sound very inviting, but it seems unlikely that many people will be able to fund two trips so close together.

All in all, a good time was had by delegates - both programme wise and otherwise. Thanks again to those who put so much into organizing this event. It was an innovative move to hold this conference at Greenmount Resort Hotel, rather than a University, but it proved very successful — the staff were particularly friendly and efficient.

Kaye Basford

CENTRAL COUNCIL

Statistical Society Honours Scholarships

Following feedback from the Branches, the NSW Branch's proposal to offer funds to the Branches ($1000 pa to each of NSW and VIC), $500 to each of the other Branches) to be used for Honours Scholarships in Statistics was accepted. There was some discussion about guidelines when students are studying a mixture of Mathematics and Statistics, but it was felt appropriate to leave decisions to Branches, with the proviso that the aims of the Scholarships are to encourage students to do Honours in Statistics and to promote the Statistical profession.

Statistical Education

Based on proposals from Dr Ken Sharpe, it was decided:

(i) to publish in the Newsletter a precis of, together with comments on, the Chance and Data part of the National Statement on Mathematics;

(ii) that a member be nominated within each state and territory to liaise with the appropriate education authority in matters concerning the teaching of statistics, particularly in any developments that may arise from the National Statement; it is hoped that this will assist in encouraging education authorities to consult with statisticians in matters to do with teaching statistics;

(iii) that Dr Sharpe conduct a pilot survey of all statistics courses given at Melbourne University as a basis for a proposal to survey tertiary institutions on the teaching of statistics, both within and outside statistics departments;

(iv) that Dr Sharpe contact the organisers of the ASC in Perth, 1992, on the possibility of holding a workshop on statistical education at the tertiary level prior to the conference.

Australian Foundation of Science

It was decided to join the AFS with the once-off payment of $5000 as requested. A number of projects of importance to Statistics were discussed, making a choice difficult, but also leading to the suggestion that it was important that all projects undertaken by the Foundation should involve statistical representation whenever data or statistical modelling are involved. It was therefore decided to request that the Foundation ensure this in all its projects.

New Editor and new Circulation Manager

Professor Ian James will take over as Editor from Associate Professor Charles McGilchrist in August before Charles departs for a year's leave in Seattle. Council expressed their appreciation of Charles' fine work as Editor.

Mr Greg Griffiths, ACT Branch, is the new Circulation Manager. One of Greg's tasks is to liaise with the Branches to improve the data base on our membership.

Delegates to the Annual General Meeting

Because it can be difficult for delegates to attend the AGM in February, it was decided to slightly change the current

policy on Council support for delegate attendance at Central Council meetings which states:

> "the Society will pay for the fares of one Branch representative to Council meetings if the Branch would not otherwise be represented at the meeting"

by the addition of the following:

> "For the Annual General Meeting, the above representation of the Branch will not include the President, Secretary or Treasurer of Central Council."

Statcomp/Biostats

Council thanked the organising committee for their efforts in organising a highly successful conference. There was some discussion on the possibility of raising the status of Statcomp through the IASC, and it was suggested that the organisers of the next Statcomp could explore possibilities with IASC.

Guidelines for accepting sponsorship money

In view of recent suggestions for conference sponsorship that may have been a little controversial, it was decided that there should be guidelines as follows:

> Sponsorship money is welcome for matters relevant to Statistics, provided the objectives of our Society will not be placed in any jeopardy. In cases of doubt, conference organisers and/or interested members should consult with the Executive who may consult with Council members.

Australian Mathematical Sciences Council

Professor Tim Brown reported on the deep disquiet felt by all members of the AMSC about the proposals for development of mathematics profiles supposedly based on the National Statement for Mathematics. When the National Statement was in preparation, the AMSC had protested about the very short notice given to them for comment and that the AMSC had not been consulted in the formative stages. Despite assurances that not only would this not happen again, but also that the National Statement was never to be used in a prospective way, a project on assessment profiles was not only established, but had proceeded for 5 months before any of the professional bodies representing mathematics, statistics and mathematics education had been approached. The AMSC was extremely disturbed by the project so far, but a letter expressing their concerns had been ignored. Tim circulated a draft press release from the AMSC.

There is to be a National Mathematics Summit in Canberra in November on the importance of mathematics and statistics in Society. It was decided that the Society should be represented by the President and Secretary, with support also for a speaker if necessary.

Proposal for a Publicity Officer

It was decided that we should appoint a Publicity Officer whose duties would include overseeing and arranging professional assistance as needed in:

(a) the marketing of the Australian Statistical Journal, and possibly the Newsletter;

(b) preparing, updating, distributing and publicising our careers material;

(c) establishing and maintaining records of talks, articles, contributions to public policy and other community, PR and similar activities in which SSA members have been engaged.

Helen MacGillivray
Honorary Secretary

BRANCH REPORTS

New South Wales

This year, the branch has met monthly since the Annual General Meeting in March. In April, the branch function was the symposium on **Modern Regression Methods**. All meetings since have been general meetings.

In May, the speaker was Noel Cressie from Iowa State University. His topic **Mapping Disease Incidence** attracted a large audience of people working in medical and public health research. The talk focused on the technical detail of mapping in the regression sense using kriging methods to derive spatial stochastic models.

In June, Joseph McKean from Western Michigan University lectured on **Response Surface Methodology based on Robust Procedures**. He showed the wide applicability of response surface methods and pointed out that because the method is implemented using least squares it is sensitive to outlying observations. Robust techniques are analogous to least squares, less sensitive to outliers, more efficient for heavy tailed error structure and computable. Professor McKean introduced himself as the man from Kalamazoo which we learnt does not seem to have an analogue in Australia. No information was given about its robustness.

In July, Debbie Street from the University of New South Wales spoke on **Change-Over Designs** which she pointed out provide a way of comparing a set of treatments using a limited number of experimental units and allowing assessment to be made of the relative merits of the treatments and of their residual effects. Dr Street reviewed the work on optimal designs and presented an algorithm for the construction of such designs for arbitrary values of the number of treatments, units and periods.

The speakers for the rest of the year are Charles McGilchrist (August), Murray Cameron (September) and Des Nicholls (October). The monthly meetings are usually held on the third Tuesday of each month at the Women's College, University of Sydney at 6 pm. The talk

commences at 6.30 pm and afterwards members of the Council entertain the speaker at dinner. Visitors are very welcome. Please contact Ann Eyland, Secretary for further information (telephone (02) 511195, fax (02) 5196944).

Victoria

April Meeting

The meeting was a joint meeting with ASOR. It was addressed by Meir Herzberg who talked about the application of a Value Iteration Algorithm based on Dynamic Programming to policy decision processes. He showed how a system which is time-at-state and decision dependent can be solved using k step ahead acceleration adaptions of VIA. This gives rapid convergence at the expense of a slight increase in the work per iteration.

AIDS: What Are Statisticians Doing About It?

The May meeting of the Branch was addressed by its president, Prof. Niels Becker of La Trobe University. The areas where statisticians have become involved in the HIV/AIDS epidemic, namely clinical trials, backward and forward projection and in developing new statistical methodology were outlined. Some of the active research topics such as estimating the incubation period distribution, the infectivity function and optimal screening strategies were introduced. Also outlined were the types of data available and the challenges associated with its incompleteness and bias.

In the area of AIDS predictions, the method of back-projection was described in some detail. This method uses only the monthly AIDS counts and assumes that the incubation period distribution is known. In particular the newly developed method of nonparametric back-projection using the EMS algorithm was explained. This incorporates a smoothing step in the more familiar EM algorithm and has the benefit of estimating a smoothed HIV infection intensity and speeding up the convergence. Examples of the method on data from Australia, the USA and Japanese haemophiliacs were shown. Simulations which assist in the estimation of bias and of precision of the method, sensitivity analyses of assumptions such as the known incubation period distribution, the effect of treatment modification and a way of incorporating covariates, for example age, into the method were outlined.

Niels ably demonstrated that the HIV/AIDS epidemic provides many new and challenging problems for statisticians.

What ought to be the role of statisticians in the Quality Movement? — June

This meeting arose from a throw-away line spoken behind closed doors. Robert McEntyre of IBM Australia as a consultant to Shell had remarked "The greatest danger to the quality movement is statisticians". Three days later he was issued with an invitation to address the Victorian Branch.

He argued that statisticians wishing to use their skills to improve organisations' processes need to shake off the tag "statistician" because it is usually interpreted to mean "number cruncher". Analysing data should generally be left to the owners of the processes to which the data is relevant. Statisticians wishing to contribute to the quality movement need to broaden their experience to include organisational behaviour and the subjects of the Australian Quality Awards Criteria:

- leadership,
- customer focus,
- policy and planning,
- information and analysis,
- human resource management, and
- quality process, products and services.

Robert sees himself as a management consultant. One aspect of Deming's philosophy which he does not agree with is that there should be a statistician reporting directly to the Chief Executive Officer.

Our second speaker was Alan Long of Alan Long Quality. He also would discourage statisticians (and he calls himself a statistician) from being technical specialists. His main role is that of translator, concept bundler and coach, working towards a model for organisations in which statistical understanding is spotted throughout the organisation. His skill at translating statistical concepts into cartoons could probably not be emulated by many lesser mortals. He suggested that Robert's model of statistician as management consultant will often be in combination with this role.

Alan said that it was important to recognise that quality ideas are currently regulated by a *command economy*. Organisations are told which quality ideas they must espouse in order to achieve preferred supplier status to the XYZ auto manufacturing company or to satisfy Australian or ISO Suppliers Quality Systems Standards. You couldn't call this a *centrally controlled* economy for quality ideas because the Australian Organisation for Quality, Australian Quality Circles Association, Australian Supplier Institute, Standards Association of Australia and Total Quality Management Institute all claim to have the answers, but they sometimes worship different gurus and the answers aren't always the same.

His advice for solo statisticians included the following points.

- Show passion for the problem.
- Treasure the data. (It was probably hard-won, and all data has major shortcomings.)
- State results in black and white, not mealy-mouthed statistical expressions of non-commitment.
- Blend your results with the brains of the problem-owners. The most crucial issue in the practice of statistics is how other people's brains will work once statistical ideas are inserted.

Discussion in the lecture theatre and at dinner afterwards was wide-ranging and showed that the topic was of great interest to some members.

Queensland

How much garbage?

While in Queensland for the StatComp/BioStats 91 conference and a series of lectures for the Departments of

Mathematics at The University of Queensland and the Queensland University of Technology, Professor Sandy Weisberg found time to address the June meeting of the Queensland Branch of the Society. Sandy revisited the gargabe disposal problem faced by his home town of St Paul, Minnesota, which he had discussed with the Canberra Branch at their meeting in May. Sandy's talk illustrated the sorts of problems that are often encountered when collecting 'real data'. Full details of the talk are given in the Canberra meetings summary.

Designing Practical Experiments

Another illustrious visitor to S.E. Queensland, Professor Roger Mead spent a few days in Brisbane prior to the StatComp/BioStats 91 conference. During that time he was available for consultation on all aspects of experimental design. Roger also spoke on basic principles for designing experiments at a seminar given to the Department of Agriculture at The University of Queensland in the last week of June. He stressed that all experiments should be designed efficiently with maximum use being made of any data gathered. Most experimental designs in common usage were established over forty years ago. With the advances in computer technology that have taken place recently we are no longer restricted to these designs. Procedures for fitting designs to the natural blocking patterns can be simply defined for both structured and unstructured treatments. Many standard computer packages are available to carry out these analyses.

Conference Extras

Students from Griffith University, Queensland University of Technology and The University of Queensland, spent the changeover day at the StatComp/Biostats 91 conference as guests of the Queensland branch of the Statistical Society. The catering staff at Greenmount Resort did a splendid job in providing a hot lunch for all 240 people present that day.

South Australia

A Reliability Study of a Conveyor System

The Branch held a joint meeting with the SA Chapter of the Australian Society for Operations Research on Wednesday 5th June. Peter Taylor of the Department of Applied Mathematics at the University of Adelaide addressed the meeting on his joint work with Hien Vu, Department of Mathematics, University of Western Australia on a reliability study of a conveyor system.

The talk described the development of reliability models for the ore delivery system used at Alcoa's Pinjarra aluminium mine and refinery in Western Australia.

It turns out that in many of these models the equilibrium probabilities for the system throughput capacities are independent of the distribution of the breakdown and repair lifetimes, that is the corresponding model possesses insensitivity properties. In other cases the model is not insensitive, but insensitive lower bounds for system downtime probabilities can be calculated from simple modifications. Peter informally discussed how such models can be set up and analysed.

Statistics in a Publicly Examined Subject: Contemporary Mathematical Applications

The Branch President, Bob Hall of the University of South Australia, addressed the Society on Wednesday 26th June on statistics in a publicly examined subject: contemporary mathematical applications.

CMA is a new, stand-alone university entrance subject being developed by the Senior Secondary Assessment Board of SA Mathematics Curricula Area Committee. It is intended that, while it will not provide the appropriate background for students seeking to study engineering and the mathematical sciences at tertiary level, it will constitute a good basis for admission to a wide range of other post-secondary areas of study. Whilst the subject may be undertaken on its own, it is intended that it may be studied in conjunction with Mathematics I. The course content components are Statistics, Operations Research and Models of Growth. The final draft is in preparation.

Bob talked about his experiences on the writing committee, outlined the content of the statistics component and gave his views on how statistics courses might be constructed.

A number of South Australians attended Statcomp/Biostats at Coolangatta. A Special Meeting of the SA Branch Council was held at Doyle's Restaurant on the Thursday evening and voted a motion of congratulations and thanks to Tony Pettit and his team.

Canberra

How Much Garbage?

The May meeting of the Canberra Branch of the Society heard Sandy Weisberg (University of Minnesota and visiting ANU) talk a lot of garbage. Or to be more precise, talk **about** a lot of garbage. It seems that, during the 1980's, the good folk of the State of Minnesota decided that the use of landfills to dispose of their trash and garbage had to stop. What to do with all the rubbish left over was not legislated for, however. It was up to local authorities to work out solutions best suited to their needs. One solution adopted by several local authorities was to build a garbage fuelled power plant. Unfortunately, the reality is that power produced by burning garbage is more expensive than that produced by burning coal. So, to pay for the plant, these local governments passed a law that required each property owner to pay a service fee in proportion to the amount of garbage they produced. The trouble was that no one knew how much garbage each property owner produced. Furthermore, Minnesotan trash collectors, by and large, were not receptive to the idea of telling the Government how much work they did. An alternative method of deciding on how much to charge property owners for disposing of their garbage had therefore to be found, and this is where statistics (and Sandy) entered the picture. Data on number of garbage collections per week and size of the garbage 'skip' were obtained from a sample of 1000 businesses. These indicated that over 60% of the garbage was being produced by less than 5% of the businesses. They also enabled Sandy to fit a model which related amount of garbage produced (measured by 'skip' size times frequency of

collection) to known information about these businesses (building area, lot size). This model was eventually used to set the service fee to be paid.

Book Issues

The June meeting of the Society moved on to a higher plane, and considered 'Book Issues'. Addressing the meeting, Professor Roger Mead (University of Reading and visiting ANU and CSIRO) spoke of the work that had been carried out by the Statistical Services Centre at the University of Reading on analysing data that had been collected under the UK's Public Lending Right Act for assessing payments to authors of books borrowed from public libraries. The PLR data represent a sample of about 1% of all annual loan issues from public libraries, and the statistical investigation aimed to estimate variability and reliability of author's payment calculations, patterns of book lendings in libraries, particularly inter-library variations, and to explore the representativeness of the rotating sample scheme used to select libraries from which loans data were collected, as well as possible alternative sampling schemes. Three different methods of variance estimation were tried, with a marginal preference being expressed for assessing the reliability of author payment estimates based on an 'occurrence-issue' model for the PLR data. However, this model did need to differentiate between 'name' and 'genre' authors before it could be considered to produce results that were stable from year to year. In a wide ranging talk, Professor Mead also discussed the problem of modelling inter-library variation in loans (made especially difficult by the anomalous lending patterns of small 'specialist' libraries) and alternative sampling strategies that could be used to collect PLR data. There was clearly a lot that could be done to improve the current methodology. Unfortunately, as is the way with many 'interesting' statistical problems, no sooner do they become amenable to analysis than someone changes the ground rules. In this case, it appears as if PLR data will be collected in the future by computerising the loans records of the public libraries affected by the scheme.

Other Activities

July was a busy month for the Society in Canberra. It started with a larg(ish) ACT contingent leaving for the warmer climes of the Gold Coast and STATCOMP/ BIOSTATS-91 (where, according to one traveller, it rained every day), then moved quickly into Data Analysis Workshop II at ANU, which focussed on analysis of repeated measures and longitudinal survey data, then onto another ANU Workshop, this time on Saddlepoint Approximations, and finally ended with the Society's participation in Careers Expo 91 at the Bruce College of TAFE. Capably organised by Alan Welsh and Caroline Bowles, this year's display consisted of four Mac SE30's running a variety of programs aimed at introducing high school and college students to statistics and data analysis. As in past years, these programs included that old favourite, the 'Cars' data set running under FASTAT. However, this year the Society also has access to X-LISP-STAT, courtesy of Sandy Weisberg, and Alan had prepared a demo that used this program to emulate simple random sampling from a (large) jar of jelly beans. At each session, students visiting the display were given the opportunity to enter a competition (prize a packet of jelly beans) to guess the colour distribution of the beans in the jar, by either using either their own intuition regarding this distribution, or by using the estimates generated by Alan's sampling program. A notable winner at one session were two girls who decided to use Alan's program to generate about 20 samples, and then put in an entry which averaged the estimates generated by these samples. Another victory for statistical thinking!

SPECIAL INTEREST SECTION

Medical Statistics

Consideration is being given to a workshop preceding the 1992 Statistical Conference in Perth. One idea that is being floated concerns "the use of statistical analyses and arguments for resolving issues of causation in the law, government policy and public health". Recent examples include determination of the number of deaths caused by drug use, a possible link between power lines and cancer, and the health effects of passive smoking.

In all these debates, meta or overview analysis has been used to pool information across epidemiological and other studies. This concept has been exploited in the behavioural sciences, and more recently applied to randomised intervention studies by Richard Peto and others. The aim of a meta analysis is to objectely and quantitiatively combine results from comparable studies to give a more precise estimate of effect. This estimate can then be used with population data on an exposure to calculate the proportion of all cases "attributable" to the exposure. Needless to say, the results of such calculations, especially when presented as a valid scientific process carried out by respected statisticians, has the potential to carry great weight in resolving issues in government policy, the law, and public health survey. Furthermore, the process is not purely a statistical exercise, and cannot be successfully conducted without an understanding of the scientific issues involved, the social and political forces underlying the research and its publication and reporting, and the interpretations of statistical analysis by non-statisticians. Statistical issues include the appropriateness of meta analysis to epidemiology, weighting according to "quality" of study, and the sensitivity and precision of estimates.

At this early stage it would be useful to know of this topic is of general interest to members of the Society. I would also be interested in any other suggested topics for a workshop, either in Perth or at any other time or place. My address is on the back page; phone (03) 344 6991, fax (03) 344 7014.

John Hopper
Section Chair for Statistics in the Medical Sciences

STATSCOMP/BIOSTATS 91 - Comments on *your* comments

The organising committee included a questionnaire for delegates requesting comments on the conference. This article, by someone not totally unfamiliar with the planning of conferences/symposia, discusses aspects of the conference with reference to the questionnaires received by the organising committee.

The venue and other local arrangements.

- *"Full marks for registration, welcome party, conference dinner."*
- *"Local arrangements were excellent. Difficult to find any fault"*
- *"Coolangatta in winter? How wonderful if you are from Melbourne."*
- *"We ate too much - not enough exercise."*

Because there was most comment and most consistency of comments on these aspects, they will be considered first. There was unanimous acclaim for the excellence of the hotel for comfort, position, layout and food and service, and for the general conference organisation. The hotel nestles on the slope of Greenmount headland, cleverly laid out to take advantage of views to the south over the Tweed estuary to Fingal, to the west to Mt Warning, and to the east over Rainbow Bay to Pt Danger. One particular feature that is brilliant from a conference point of view, was the merging of inside and outside eating areas that also merged into bar and poolside areas, adjacent to the annexe to the conference rooms. The whole area was informal, comfortable and attractive, whether for breakfast, daytime or evening, and made interaction throughout the day just so easy. The passing through of the beach-bound merely added to its charm. It should be emphasized that although such 'focus' areas can be easier to achieve in a hotel environment, they can be achieved in other environments. Also the types of 'focus' areas don't have to be the same from one conference to the next, but no matter where a conference is held, the 'interaction facilities' for the whole day (and evening) are obviously of topmost importance to participants. Another aim that is probably easier to meet in a hotel environment is the immediate re-injection of any profits into the conference, although once again, this can be done in other environments, and a hotel does make the financial arrangements much more sensitive to perturbations.

Having extolled the virtues of a hotel environment, respondents then rather wishfully (and perversely?) commented on the lack of facilities that are taken for granted in an academic environment, particularly with respect to lecture rooms. There were also a few remarks that the hotel was a little expensive. It is worth commenting that the choice of Greenmount resulted from the unavailability of convenient and appropriate accommodation in Brisbane City at a reasonable price; Greenmount was cheaper than the equivalent or even the next level down of hotel accommodation in the city, and the problems of lack of academic-type facilities and expense are universal to hotels. Greenmount also meant much transporting of equipment and varieties of luggage, but the combination of planning and organisation by both the committee and the hotel seemed to minimise most disadvantages, although 30c per copy for photocopying was a lesson in itself (especially for the secretary of Central Council)! There is no simple solution to this balancing of advantages and disadvantages, and I think each conference committee just has to make a choice depending on conference size and local conditions. One complaint about hotels that can be rectified, and leaves one wondering how business people function in a perpetual artificial atmosphere, was stuffiness of the conference rooms. The hotel staff probably now regard statisticians as fresh-air freaks.

Another interesting side-effect of the venue and conference timing was the unusual number of statistical offspring sighted, of a range of ages, sizes and interests. These were occasionally glimpsed as they moved between beach, spa, pool, table-tennis and other activities, or sometimes at breakfast (with or without a parent). Some also kept an eye on their parents' welfare, with the prize for solicitude going to the 12 year old who, at great inconvenience to herself, come looking for her parent at 12.30 am to check that the said parent had survived the Central Council meeting, with the immortal words "I was wondering where you were — don't you think it's time for bed?" The conference secretary's daughter, who was occasionally seen perched on his shoulders, won the bathing beauty prize hands down.

Despite the chairman's instructions to proceed to the surf before turning into Oscar's on the Beach, delegates managed to find the restaurant without getting too wet or sandy, and enjoyed excellent dining and conversation while looking out across the sea to the lights of Surfers — always at their best from a distance. There was considerable praise for the dinner, but also a couple of complaints about the cost and the over-subscription of the dinner. The organising committee observed that the worst problem they faced was in fact this unexpected over-subscription — partially a result of more delegates than expected. Again, conference dinners are balancing tricks between quality (both venue and food), quantity and 'quost'. No speeches were planned, but a conspiracy was hatched between some of the organisers and executive to take advantage of Richard Tweedie's attendance at the dinner just before his departure of Colorado, to farewell him in a fitting tribute from the President, Tim Brown. I cannot help future organisers about delegates' views on speeches, because there was not one comment about them on the questionnaires, although there was obvious enjoyment of Tim's speech, particularly his references to Richard's famous (infamous?) after-dinner speech at the Adelaide conference in '86.

There were a couple of comments requesting an afternoon free for an excursion (the organisers tried to do this, but joint pressures were too much), and one request for an accompanying persons' program. Unfortunately, such a program requires more accompanying persons than are usual at statistical conferences. The writer has been observing with interest, as a part-time accompanying person and hostess, an international conference in Physics

which, amongst many other differences from our conferences, does have an organised accompanying persons' program, but also has over 500 delegates with over 120 accompanying persons.

The weather

This rates a separate section, being completely out of organisers' control. Conference delegates were greeted with the kind of brilliant Queensland winter weather that amazes visitors from cooler climes and leaves locals wondering about the possibility of no winter at all. The weather didn't quite live up to its initial promise, allowing itself to be weakly influenced by the dreaded southern systems, but, to the locals' amazement, it was still described as wonderful in the questionnaires, confirming our fears about southern winters. There was certainly no deterrent to the NZ contingent who tended to emerge from the surf in time for breakfast, looking virtuously, if damply, superior. Despite the showers, in true Queensland fashion, even the rainbows were brilliant, demonstrating the origin of the name Rainbow Bay.

As in 1984, Queensland attracted many more delegates than expected. I did warn about this but confidence based on a sample size 1 is not strong. Can it just be the reputation of the weather, or are there other attractions of life/statistics behind the banana curtain? On the other hand, NSW last year also attracted many more delegates than expected, so perhaps it is that statisticians' needs for interaction are increasing.

The program and associated aspects

- *"I found the program interesting: good choice of invited speakers and enough interesting contributed papers to keep me off the beach for almost all the time!"*
- *"Speakers, as usual, varied from excellent to very poor."*
- *"Reasonable mix of theory and practice. Should not have long theoretical papers straight after lunch as it makes people more likely to injure themselves falling off chairs!"*
- *"Statistical computing is very indefinitely defined, and it was good to have image processing as a focus for lots of the talks. A good thing having the Biostats meeting adjacent, since, for example, image processing was a good link between the two."*
- *"Chairing was very good — chairpersons kept the sessions flowing and provided interesting commentary."*

The program included a variety of topics and examples both within and between the two main components of Statcomp and Biostats, but there were some interesting common characteristics and sub-themes that perhaps emphasized very well the impact of computing growth on statistics in both research and applications. Frequently problems and examples were discussed that exhibited large numbers of both parameters and observations, even though the variation in 'large' itself was also large. Topics also demonstrated the increasing ability to exploit previously analytically difficult models, in such diverse examples as analysis of rare disease patterns, wheat variety trials, tomography images in linguistic analysis and others. Some of the aspects of Julian Besag's interesting and commanding overview of the combination in image analysis of Baynesian modelling, Markov random fields and Monte Carlo sampling methods such as Gibb's and similar samplers, were also found in other applications such as analysis of the HIV epidemic. The importance of graphical work was emphasized throughout, with Sandy Weisberg's beautifully constructed talks perhaps providing the ultimate graphical focus, and Werner Stahel's overview on the future of statistical computing environments providing the 'wish list'.

Time series as always played a significant role, with the interesting impact of Peter Thompson's talk perhaps lying in the difficulties of educating the media as well as politicians. As indicated in the comments, Chris Glaseby's talk was not only interesting in itself in looking at applications of image analysis in soil characteristics, land cover and ultrasound analysis, but also provided linkage between the two components of the conference. Other linkage was provided in the general linear models session with Richard Morton and Charles McGilchrist, while Roger Mead's discussion of tasting tests, measurement scales and self-adjustments, and Kaye Basford's of multi-attribute genotype and environment data provided different topics. As always, these talks reflected these speakers' commitment to, and involvement with, applications.

As can be seen from the comments quoted above, and as would be expected, there was a diversity of comments about the program, reflecting the range of interests of delegates. Some respondents seemed to regard themselves as belonging more to the Biostats than Statcomp, but there did not appear to be delegates who regarded themselves as belonging to Statcomp more than Biostats — probably reflecting the broader and therefore looser base of Statcomp. Certainly delegates enjoy papers on applications. Coincidentally, there was informal discussion both at the Central Council and in general conversation on encouraging more application papers both in the applications section of the AJS, and at conferences. There were a number of observations on the length of time allotted to papers which once again demonstrates the balancing tricks required of an organising committee: delegates liked 30 minutes for talks, but felt an hour was too long, making the balance between plenaries and contributed papers difficult to maintain. Some minor comments included appreciation of the instructions for authors, a request for full proceedings, a request for the program even earlier than four weeks before this conference; the last would be very difficult.

Overall, respondents felt it was a splendid conference, and I'm sure all delegates would support me in thanking the organizers for their thoughts and efforts.

Helen MacGillivray

Report on the Forum on Priorities for National Health Statistics

The Forum held on 14 and 15 February 1991 was attended by 120 health service researchers, epidemiologistics, statisticians, government administrators and representatives of consumer and community groups, health professions, private and voluntary health organisations from all States and Territories of Australia. The purpose of the Forum was to consider the state of Australia's health statistics systems, and provide advice to the National Committee on Health and Vital Statistics on the priorities for national health statistics for the coming years.

The substantial developments in national health statistics since the National Health Statistics Workshop held in 1985 and the support by governments at all levels of the recommendations from that Workshop was recognised by the Forum. There was a broad consultative process, incorporating public submissions and consultations that led up to the Forum. The Forum provided the vehicle to bring together the issues important to the development to national health statistics in Australia and to consider the means of addressing them. The Statement and Recommendations of the Forum provide the direction and framework for the next step in development of national health information in Australia.

The National Committee on Health and Vital Statistics, a committee of the Australian Institute of Health, is responsible for recommending priorities for national health statistics. The Institute has a national leadership role in, and is responsible for, promoting the development of health statistics. It provides advice to the Commonwealth, State and Territory health authorities to the Australian Health Ministers' Advisory Council, and to the Australian Bureau of Statistics through the Australian Statistics Advisory Council.

The Forum strongly endorsed the following statement.

FORUM STATEMENT

The Australian health care system costs about 28 billion dollars annually, and the cost is rising. Health care is also increasing in its complexity. Policy makers and health managers, at all levels, need reliable information to enable them to formulate policy, plan and manage services, and to assist them in making difficult choices between competing demands for health dollars. The availability of, and access to health statistics and other health information are necessary to evaluate current approaches to health services and to make them more equitable, appropriate and efficient. Also the community is entitled to information on how its health resources are used, and the results of that expenditure. For these purposes national health statistics are essential.

Health statistics arise from many sources. Many can be collected only at the point of delivery of the health care services which are delivered largely through State and Territory governments and by private providers. If health statistical and related information systems are to realise their full management, research and evaluative potential, they need to be of acceptable quality, nationally compatible, timely, widely accessible, and standardised in ways which will permit regional, State and international comparisons. The development of adequate Australian databases is often impeded by issues of data ownership and parochial unwillingness or inability to pass data from the site of collection to the point of national aggregation. As a consequence many desirable data systems which could serve important needs of the States, the Commonwealth, and the community at large are inadequate or non-existent.

Recommendations

The Forum agrees that there is a need to improve the national health information system and proposes the following integrated package of recommendations to achieve that end.

1. **Develop a National Health Information Agreement and Strategy.**

   The new era in Federal/State relations offers an opportunity to develop a climate of greater co-operation through a National Health Information Agreement which should involve Commonwealth and State Government Health Ministers (and perhaps others). Under such an agreement the parties would agree to cooperate in the development, collection and exchange of the data, and to establish a mechanism for providing incentives to encourage the development of data in those areas where needs are not being met.

   At present, national health data are collected using a variety of models, each of which has its strengths and relevance to specific types of data collection. The National Health Information Agreement would provide for the establishment of a long term strategy for the improvement of national health data collections, and their linkage to health policy development. The strategy would outline a process under which the different types of national health data collections could be better integrated. This would allow standardisation of procedures, the elimination of duplication, while retaining recognition of the individual collections as component parts of an overall national health statistics system.

   The strategy would also provide a mechanism for review and development.

2. **Educate the Australian community about the need for, and benefits, of improved health statistical systems.**

   Good health care depends upon good health information systems. Without access to a wide range of health data, managers, researchers and planners cannot function efficiently and the potential to improve health standards is reduced.

   This fact may not be widely understood in the Australian community, which is fiercely and justifiably protective of its privacy in matters relating to access to identifiable health records. Effective

health information systems depend, however, upon the ability to link different types of records about the same individual. Linkage will permit better understanding of the circumstances and causes of unusual health events, and assist the development of strategies for improving the health of the whole population. By using anonymous identifiers such linkages can take place without intruding into individual privacy.

Australians need to know that, at present, Australian health infor-mation systems are substandard and inadequate to the task of running a modern health care system. By international standards our health information systems are seriously deficient. Until now, the deficiencies have been partly a consequence of institutional incapacity to process and provide the necessary information. In recent years that incapacity has been substantially remedied. The next step forward requires broad community support; this will require greater community involvement and understanding of the way in which health information systems work to improve health care.

3. **Increase the number of people with the expertise to analyse and interpret health statistics.**

   One of the factors which limit better use of existing information systems is a shortage of people with expertise in analysis and interpretation of data in this field.

   The skills required include the ability to work with data sets, to present numerical results in ways which are understandable to non-experts, to explain to others the strengths and limitations of the data, and to interpret results in the context of the relevant health issues.

4. **Give early attention to meeting identified gaps and priority needs in the Australian health information system.**

   The Forum has identified a range of issues which demand early attention, and for which cooperation across State and institutional boundaries will be required. These issues are in the areas of health status and risk factors, institutions, primary care, outcome measures, equity and access and labourforce, and are provided in detail at the end of this Report.

   It is recognised that resources for health information systems are constrained. However, where existing data collections do not meet current or projected needs and therefore are an inefficient use of scarce resources, the creation of new data collections can be resourced by closing down those existing collections.

   Modern electronic capacity has, however, greatly increased the efficiency of many statistical systems and often the problem is not so much one of scarce resources as of political will or Federal/State inertia. Politicians and decision makers at all levels need to recognise the interdependence of local, State and national information systems, and the need to facilitate the sharing of health information across administrative borders. National overviews depend on aggregation of local area data, and local areas depend on nationally aggregated data to put their own local data into perspective. Allocative decisions at all levels demand data which can be aggregated or disaggregated to suit the specific need.

   Standardisation of data systems across the nation is proceeding slowly, and in some areas has barely commenced. The incompatibility of data systems is a major barrier to the development of an efficient national system.

5. **Improve access to, and dissemination of, health statistics.**

   Poor access to health statistics is a serious problem at all levels in Australia. Underlying reasons include ownership of the data, the costs of making it available and timeliness of responses to requests. The Forum recognises the high costs of data collection and processing and the present pressures on agencies to recover these costs from users.

The Forum expresses concern at the impact that charges have on access to data at all levels, but particularly for community and individual users and urges that:

- agencies, when setting their charges, consider the ability of users to pay;
- those who fund users, take into account the fact that users may have to pay for data;
- new technologies be used to make usable information available to community groups at the local level.

Priorities

In considering priorities the Forum supports action on those areas identified as gaps and priority needs.

The Forum further agrees that particular emphasis be given to

- implementing the five recommendations outlined above incorporating the recommendation to develop a National Health Information Agreement and Strategy
- developing
  - a national primary health care data base
  - a population based mental health epidemiological data collection
- completing the coverage of those important areas where the development of national data sets are well advanced
- developing health outcome measures, and

the highest priority should be

developing a National Health Information Agreement and a National Health Information Strategy.

The key components and objectives of the National Health Information Agreement and Strategy, as identified by the Forum, are to

- make better use of existing data
- link existing data sources
- link data sets to be more widely available for epidemiological and health services analysis and research

- free the flow of information between the Commonwealth, State and Territories, to facilitate this, appropriate incentives, including financial, will need to be developed
- improve access to existing data bases by local service providers and community groups
- develop a conceptual framework and a strategy to document current activities, to identify and deal with major gaps in data coverage, including the development of incentives — primary health and mental health are the two most pressing areas
- develop the analytical methods needed to address related policy relevant issues, such as equity and access.

The Forum believes that this will provide the necessary framework to progress the development and improvement of Australia's national health information system.

Communicated by Annette Dobson

NEWS ABOUT MEMBERS

Professor Geoff Watterson of Monash University was elected as a Fellow of the Australian Academy of Science at the Academy's Annual General Meeting in April. Geoff completed his PhD at ANU in 1959, and after two years in the United States, joined the Department of Mathematics at Monash. He is internationally known for his work in mathematical theory of population genetics, including in particular his work on statistical tests of the neutral theory.

Professor Richard Tweedie from Bond University has taken up an appointment at Colorado State University in the USA. (See lead article.)

Dr Ian Saunders from Bond University has been appointed to the Chair in Quality Management at Queensland University of Technology.

Professor Joe Gani retired from his full-time position at University of California at Santa Barbara at the end of August and will return to his home in Canberra. From the beginning of September he will be a Visiting Fellow in the Department of Statistics, Faculty of Economics and Commerce at the ANU.

MISCELLANEOUS

Obituary

Statisticians, especially medical statisticians, will be sad to hear of the death of Austin Bradford (Tony) Hill, FRS, formerly Professor of Medical Statistics at the London School of Hygiene and Tropical Medicine. He was born July 8, 1897, the son of Sir Leonard Hill, FRS, a great physiologist, and died April 18, 1991. His health forced his retirement from the military after two years experience in the Navy Air Force in the Great War. During his long convalescence he became an external student at the London School of Economics. He later joined the statistics group under Major Greenwood, FRS (1880-1948) at the London School of Hygiene, becoming Professor after Greenwood's retirement. Here he worked on epidemiology with the Topley and Wilson group. Working with the Medical Research Council, to whom he was responsible for the design of experiments, he persuaded the Council to allow the randomization of cases and controls and the results were published in 1948. His fields of application were wide, occupational health, the effects of smoking on lung cancer, and many other problems. See Sir Richard Doll, FRS in *The Lancet* of May 11, 1991.

FASTS is moving the pace up a cog: A message from the President

FASTS' existence has coincided with a stronger realisation in Government of the importance of Science and Technology. We have seen some changes but it is generally felt that we need to be more pro-active than reactive. There are two major "games" being played: Award Re-structuring and the PM's "White Paper". FASTS needs to have a major influence in both agendas, not necessarily as a player in the games. A change of Government could bring about labour market deregulation and an emphasis on science and technology geared more to education and training. This could alter things quite markedly. FASTS needs to gain greater control in setting standards and establishing broad priorities to take Australian Science and Technology into the 21st century. This should be a blue-print that can be put into place in any political context.

The first phase is gaining control of our professions. Some Member Societies have strong professional accreditation processes, others have rough guides and some are acting as interest groups. Where we are interacting with the public we have a duty to establish and maintain standards.

I have consequently convened a meeting on Accreditation of Professional Status in Canberra on 30 August and a Board Meeting on 29 August. This is the first part of the wider programme which I will be outlining to FASTS' contacts in Member Societies.

Tony Wicken
President

New Journal for IASC

The International Association for Statistical Computing (IASC) has fostered communication among its members for several years through the Statistical Software Newsletter. The Newsletter has published technical articles, software announcements and reviews, and reports

and announcements of relevant meetings. From 1991, the IASC has adopted 'Computational Statistics & Data Analysis' as its official journal and the Newsletter is incorporated as a section in the journal. The journal is now circulated to all members of the IASC as part of their membership.

The journal, which is published by North-Holland and is in its 6th year, publishes two volumes per year, each of 3 issues. It consists of three refereed sections: (i) Data analytic methodology and procedures, (ii) Applications and comparative studies, and (iii) Computational statistics. Recent issues have included papers on kernel density estimation, classification, robust smoothing splines, bootstrapping generalized linear models and sampling from databases.

The IASC was founded as a Section of the International Statistical Institute in 1977 and has more than 700 members. It aims to promote the theory, methods and practice of statistical computing. To this end, amongst other activities it organises regional meetings, either independently or in collaboration with other organizations. For many years it has been associated with the Compstat meeting in Europe and this year sponsored a session at Statcomp (which was held at Coolangatta in July). Membership subscription for the IASC is 45 Swiss francs (approximately $A45).

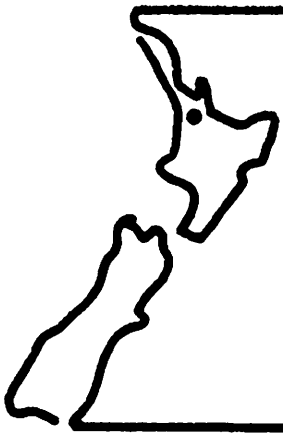
Further information may be obtained from Murray Cameron: (02) 413 7566 or murray@syd.dms.csiro.au.

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

ANZAAS Congress 1991, 1-3 October 1991, Adelaide. (Full details Newsletter 54.)
Professor David Boyd, University of Adelaide, GPO Box 498, Adelaide, SA 5001, tel (08) 228 5843, fax (08) 223 7650.

11th Australian Statistical Conference, 6-13, July 1992, University of Western Australia, Perth, WA. (Full details Newsletter 53 and 54.)
Chairman of Programme Committee, Prof. Ian James, Mathematics, Murdoch University, Murdoch WA 6150, tel. (09) 332 2480, fax (09) 310 1711, email james@prodigal.murdoch.edu.au.



1992 (XVIth) International Biometric Conference

Hamilton, New Zealand 7-11 December 1992

IBC'92 Secretary
Ruakura Agricultural Centre
Private Bag 3080
Hamilton
New Zealand

	Pre September 1991	Post September 1991
Phone	64-71-562839	64-7-8562839
Fax	64-71-385012	64-7-8385012
E-mail (internet)		ibc@ruakura.maf.govt.nz

INTERNATIONAL BIOMETRIC CONFERENCE, 7 - 11 December 1992, University of Waikato, Hamilton, New Zealand

The Australasian region of the Biometric Society is hosting the sixteenth International Biometric Conference at the University of Waikato in Hamilton, New Zealand on 7 to 11 December 1992. This is only the second time the conference has been held in Australasia. Sydney was the host city in 1967. We are confident that both the scientific and social programmes will be stimulating and enjoyable.

The statistical community in Hamilton centres on the neighbouring campuses of the University and Ruakura Agricultural Centre. Co-operation between the statisticians at the two locations is focused through the Waikato Centre for Applied Statistics, directed by Dr Ray Littler. This Centre and The Unit for Quality and Productivity Improvement, directed by Professor J A (Nye) John, also provide courses and consultancy services to industry.

Programme

The invited papers programme committee is chaired by Professor Jean-Jacques Claustriaux (Belgium) and the contributed papers programme is chaired by Professor J A (Nye) John. Programme information and calls for papers will appear in future issues of the Biometric Bulletin, SSA Newsletter and NZSA Newsletter.

Satellite Conferences

A number of satellite conferences are being planned around IBC 92.

- Bruce Weir is organising a workshop on Molecular Evolution for 3-4 December 1992. It will be held in Rotorua at the Forest Research Institute.
- Katrina Sharples is organising Statistical Methods in Epidemiology in Queenstown, 14-15 December 1992. The focus will be on current research in statistical methodology with emphasis on the analysis of dependent data. More information is available from Katrina Sharples, University of Otago Medical School, P.O. Box 913, Dunedin. email: Katrina@Otago.ac.nz.;
- A one day course (topic to be finalised) is planned for just prior to the conference at the University of Waikato in Hamilton.

Please send suggestions for the conference programmes and organisation to the local organising committee; in particular we would appreciate early information on possible statistical visitors to Australia who may be a draw-card to IBC.

Further details and information available from Dr Harold Henderson, IBC '92 Secretary, Ruakura Agricultural Centre, Private Bag 3080, Hamilton, New Zealand;
(Pre September 1991) phone 64-71-562839, fax 64-71-385012;
(Post September 1991) phone 64-7-8562839, fax 64-7-8385012;
e-mail (internet) ibc@ruakura.maf.govt.nz.

OVERSEAS CONFERENCES

IMSIBAC-4, 4th International Meeting of Statistics in the Basque Country, 4-7 September 1991, Bilbao, SPAIN.
Information : J.P. Vilaplana, P.O Box 32, 48940 LEJONA/LEIOA, SPAIN.

International Statistical Institute, 48th Biennial Session; 9-17 September 1991, Cairo, Egypt.
Information: ISI Permanent Office, 428 Prinses Beatrixlaan, PO Box 950, 2270AZ, Voorburg, The Netherlands.

7th International Genstat Conference, 23-27 September 1991, Papendal (near Arnhem, Holland).
Information: Roger Payne, Rothamsted Experimental Station, Harpenden, Herts, United Kingdom, AL5 2JQ.

The Eighth International Methodology Symposium '91, Theme is "Spatial Issues in Statistics", 12-14 November 1991, Ottowa, Ontario, Canada.
Information: Liane Chatterton, Statistics Canada, 3rd Floor, Jean Talon Bldg., Tunney's Pasture, Ottawa, Ontario, K1A 0T6 Canada.

3rd Pacific Area Statistical Conference, 11-13 December 1991, Tokyo, Japan.
Information: Prof. Takesi Hayakawa, Department of Economics, Hitotsubashi University, 2-1 Naka Kunitachi, Tokyo 186, Japan; phone (81) 0425-72-1101 extn. 415, fax (81) 0425-77-2298.

International Symposium on Multivariate Analysis and Its Applications, 16-18 March 1992, Hong Kong.
Information: ISMAA, Dept. of Mathematics, Hong Kong Baptist College, 224 Waterloo Road, Kowloon, Hong Kong.

Census Bureau's 1992 Annual Research Conference (ARC 1992), 22-25 March 1992, Holiday Inn Crowne Plaza, Arlington, Virginia. ARC 1992 will comprise a mix of topics such as modeling social and economic phonemena, methods for establishment surveys, modeling and measuring nonsampling errors, emerging data processing technologies, longitudinal data weighting issues, planning for national CAPI and CATI surveys, research issues for 2000 census planning, and more.

Statistics in Public Resources and Utilities, and in Care of the Environment (SPRUCE), 7-10 April 1992, Lisbon, Portugal.
Information: V. Barnett, Dept. Probability & Statistics, The University, Sheffield, S3 7RH, UK; Phone (44) 742 768555, ext. 4297; Fax(44) 742 739826; e-mail IVB@UK.AC.SHEF.PA

Fifth International Symposium on Statistical Decision Theory and Related Topics, 14-20 June 1992, West Lafayette, USA.
Information: Shanti S. Gupta, Dept. of Statistics, Purdue University, West Lafayette, IN 47907, USA.

International Conference on Computers and Learning, ICCAL'92, 17-20 June 1992, Nova Scotia, Canada.
Information: Dr Ivan Tomek, Jodrey School of Computer Science, Acadia University, Wolfville, Nova Scotia, Canada, B0P 1X0.

The 5th International meeting on Statistical Climatology (5IMSC), 22-26 June 1992, Toronto, Canada. Held jointly with the **12th Conference on Probability and Statistics in Atmospheric Science.**
Information: Francis W. Zwiers, Numerical Modelling Division, Canadian Climate Centre, 4905 Dufferin Street, Downsview, Ontario, Canada M3H 5T4, phone 1-416-739-4415, fax 1-416-739-4521, e-mail acrmfz@cid.acs.doe.ca.

International Conference on Social Science Methodology, 22-26 June 1992, University of Trento, Italy, organized by the Research committee on Logic and Methodology of the International Sociological Association. Papers are invited in fundamentals fo social science methodology, research design, data collection methods and data analysis techniques.
Information: H.M.A. Schadee/J. van Puffelen, Dipartimento di Politica Sociale, Via Verdi, 26, 38100 Trento, Italy, phone 39 461 8813313, fax 39 461 881499 or 881348, email CONF92 at ITNCISTI or SCHADEE at ITNCISTI.

Vth International Meeting of Statistics in the Basque Country, 3-7 August 1992, San Sebastian, Spain.
Information: J.P. Vilapana, IMSIBA-4, The Secretariat, PO Box 32, E-48940 LEJONA/LEIOA (Biscay), Spain.

1992 Joint Statistical Meetings, 10-13 August 1992, Boston, MA, USA.
Information: ASA, 1429 Duke St., Alexandria, VA 22314-3402.

Royal Statistical Society Full Conference, 9-11 September 1992, Sheffield, United Kingdom.
Information: Prof. P.J. Diggle, Mathematics Department, Lancaster University, Lancaster LA1 4YF, UK.

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