

newsletter

Len Cook New Government Statistician



Len Cook has been appointed Government Statistician following the retirement of Steve Kuzmich. Len has spent 20 years with the Department of Statistics serving as Deputy Government Statistician for the last 5 years. We wish him well in his new role.

Len's professional interests have been focused on improving the quality and timeliness of the data produced by the department, expanding the use of computer assisted processing in the department, providing statistical analysis for government policy making; encouraging the use of department data for informed policy making, encouraging links between the mathematical statisticians in the department and statisticians in the universities and maintaining the relevance of official statistics in the face of deregulation, privatisation and other social and economic change.

We outline Len's career on page 3.

IBC92 abstract submission and registration forms are enclosed

Contributed Paper Abstracts for IBC92 are due by 1 July 1992

To help potential participants gain a better idea of the shape of IBC92, we will try to provide some indication in the August *Biometric Bulletin* of the range of topics on offer in the contributed sessions. This newsflash will necessarily be based on those papers offered before our publication deadline of June 15, so speakers are urged to submit papers as soon as possible to help us help you reach the biggest possible audience.

NZSA Statistics Day

**Statistical Process Control
and Reliability Theory**
Friday May 15
Victoria University of Wellington

Professor Sandy Thayer, who is visiting Massey as a Fulbright Scholar, will present two talks which illustrate how the academic community can assist industry to improve quality and reliability and meet the challenges of international competitiveness. Four local statisticians will give talks which will present the New Zealand perspective.

Details of the programme are on page 4 and the abstracts of the six talks are on page 5.

NZSA AGM
Lecture Room 5
Hugh McKenzie Building
Victoria University of Wellington
12:30 Friday May 15

NZ Statisticians overseas

Please let the IBC92 Secretary know of any (expatriate) New Zealand statisticians to whom we should send information on the statistical events in New Zealand in December.

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President's Column



A problem that appears to have always been with us as a profession is the misuse of statistics. We all have our favourite tales. What I find more than a little disconcerting, is that the phenomenon shows no sign of abating despite great efforts on the part of many to educate potential users of numerical information.

The new Government Statistician, Len Cook, has recently been taking certain politicians to task on this matter and good on him! An important public issue was at stake and yet the users of the officially published data saw fit to re-analyse it and so distort the result. Clearly it is Len's job to monitor this kind of thing and right that he should speak out. However, we as professional statisticians must not leave him alone to do this. He needs our support. The community will only accept his criticisms in the long term if other statisticians also lend their voices. We must remember that while we all know that good statistical practice can enlighten and enrich, faulty analysis not only reduces understanding, but also generally undermines our profession.

Another area that constantly dismays me is the under-use, or even non-use, of statistics when the situation cries out for it. How often do we hear people say how much data they gather and how they really believe in information, yet with closer examination we find either no analysis at all or incorrect analysis - looping me back to where I came in!

I urge you to think about what you can do to help. With more and more data being gathered we need to be more vocal about the REAL USES OF DATA.

Jean Thompson

Education Committee

Statistical education in New Zealand has just taken a great step ... and it is up to you to make sure that the step comes down firmly in the right direction. This step is the book: *Mathematics in the National Curriculum: Draft* (Learning Media, Ministry of Education, 1992).

It gives New Zealand school maths a very strong "strand" of statistics all the way from J1 to Form 7. However, we think it needs quite a lot of redirection before it is right.

We're asking you to borrow a copy from your

local school (primary or secondary) or request one from Learning Media, Ministry of Education, P O Box 2923, Wellington.

You'll find that the 22 pages of statistics are full of surprises, including some pleasant ones. We'd like you to send some comments to the Ministry by June (with a copy to us).

You might like this statement about Statistics from the "Changes in Emphasis" section of the book (p.11):

Statistics

"Increasingly information is communicated through the use of data graphics. The communication of information through graphics is particularly common in the mass media. It is important that people can draw sensible conclusions from charts, tables, and graphs of various kinds. At the same time, increasing numbers of occupations demand the ability to collect data, to organise and interpret it, and to present reports and summaries. For these reasons the draft national curriculum recognises information-handling skills as essential. The need for data-handling skills is recognised by the increased emphasis given to statistical skills from the beginning of the formal educational process and continuing throughout the curriculum."

Mike Camden

Double take? NZ School Trustee Association Election Update declared "*In 23.5% of boards all current trustees plan to stand, and it is even higher in some schools.*" - perhaps some trustees are standing for re-election twice! At the foot of the page was a banner **Your contribution counts.**

New Zealand Statistical Association

The NZSA was founded in 1948. It encourages theoretical and applied statistics in New Zealand. A number of affiliated local groups are concerned with the promotion of statistics in their region.

Officers

President: C Jean Thompson

Secretary: Alistair Gray

Treasurer: Antony Gomez

Editors *NZ Statistician*: R Hugh Morton

Newsletter: Peter J Danaher, Harold V Henderson

For further information write to:

Secretary

New Zealand Statistical Association

PO Box 1731

Wellington, New Zealand

Email Agray@stats.govt.nz

Phone 04 495 4685

Len Cook: vital statistics



Uncle Len cooks up another cabinet story

After completing a degree in mathematics and statistics at Otago University, he joined the Department of Statistics in 1971 as a research officer in the Mathematical Statistics Section. He was appointed Senior Research Officer of the section in 1973 and was subsequently appointed as Director of the newly set up Statistical Methods Section in 1979. During this time Len was very interested in tax modelling using the Household Expenditure and Income Survey data collected by the department, so that it wasn't surprising that in 1981, he was appointed to the secretariat of the government's Task Force on Tax Reform. He worked with the task force between August and December of that year.

In early 1982, Len spent three months working in a variety of areas for Statistics Canada. After his time with Statistics Canada, Len returned to the New Zealand Department and took up the position of Assistant Government Statistician and Officer in Charge of the Department's Christchurch office. While in this position, he took part in the 1985 revision of the Consumers Price Index and the 1986 Census of Population and Dwellings.

Later in 1986, he was appointed as Deputy Government Statistician. His five years in this position were interrupted for seven months between October 1987 and May 1988 when he was appointed by the government as a member of the Royal Commission on Social Policy.

Len is a well known member of the NZSA who has enlivened many an AGM with his spirited defence of statistical principles and professionalism. He was Secretary of the Association from '74 to '77, and remained on the committee for the following 2 years. He has been a strong supporter of such NZSA activities as the Science Fairs, ICOTS3 and the Survey Appraisal and Public Questions Committee (SAPQC).

We wish him well in his new role.

Alistair Gray

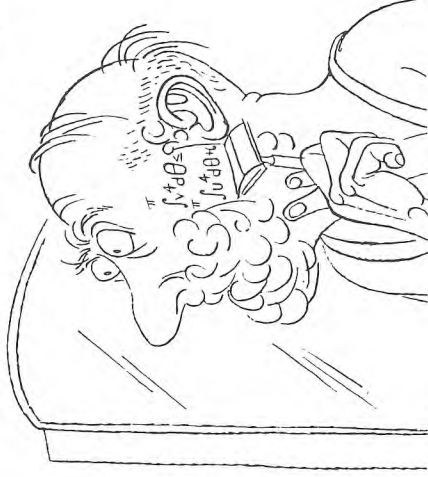
Editorial

The biggest item of news is Len Cook's appointment as Government Statistician. We congratulate Len on this major achievement at such a young age. All those who've heard Len speak know that he is a wonderful ambassador for our profession. His time as Government Statistician should enhance the profile of statistics even further.

As you can see from this issue, instead of having our NZSA mid-year conference we are saving ourselves for the end of year IBC and its satellites. This created a small clash with the NZSA constitution so we have to hold the AGM in May. The AGM is in the middle of a statistics day with special themes on SPC and reliability theory. Even if you're not a fan of AGMs the statistics day should attract you.

The Statistical Society of Australia November 1991 *Newsletter* features a four-page article on professional accreditation. Contact Harold if you would like a copy of the article. Our July *Newsletter* will include an article on accreditation.

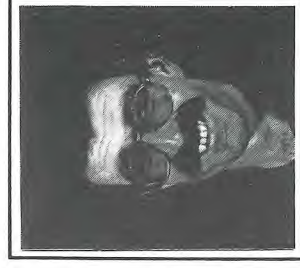
Lastly, Peter will be away on leave for the second term so Harold is handling the July issue of the *Newsletter*. Please send any items to Harold by July 1.



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Statistics Day in May and NZSA AGM

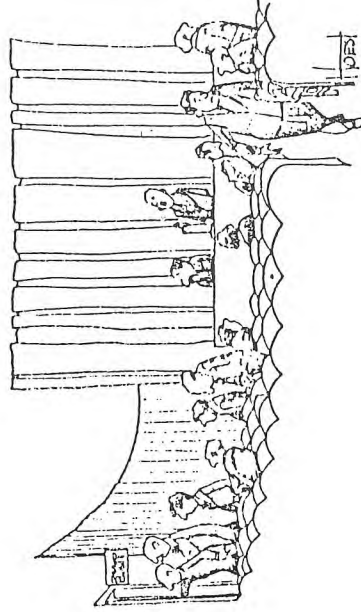
On Friday May 15 the NZSA will hold the Annual General Meeting of the Association, at Victoria University of Wellington, in lecture room 5 of the Hugh McKenzie building at 12:30. This is the Friday of the week the NZ Mathematical Society (NZMS) is holding its annual colloquium.

To make such an event more attractive we have planned a statistical day! The themes of the day are **Statistical Process Control and Reliability Theory**.

Professor Sandy Thayer, who is visiting Massey University as a NZ/US Fulbright Scholar, will present two talks with discussion which illustrate how the academic community can assist industry to improve quality and reliability and meet the challenges of international competitiveness.

Sandy Thayer's speciality in the Mechanical Engineering Department at Colorado State University is manufacturing quality control and reliability. He was director of an industrial extension program that used the resources of the College of Engineering to assist small industry in the State of Colorado. He is currently director of the reliability engineering laboratory of the Manufacturing Excellence Center. He is a graduate of Stanford University with B.S., M.S. and a Ph.D in Industrial Engineering. He is a registered engineer in Colorado and California. He has a strong background in working with companies such as IBM, Dow Chemical, Westinghouse, and many smaller companies. He recently completed a revision in a videotape series on reliability to add to his successful earlier series on reliability and quality.

Four local statisticians will give talks which will present the New Zealand perspective. We hope that the programme will be interesting to applied statisticians who want to know something more about these topics, and in particular how theory works out in practice.



"I see that our next speaker needs no introduction"

NZSA Statistics Day Friday May 15 Lecture Room 5 Hugh McKenzie Building Victoria University, Wellington Programme

9:00-9:30	Registration
9:30-10:30	Professor Sandy Thayer <i>Background and current status of Statistical Process Control from the point of view of a Yank</i>
10:30-11:00	Morning Tea
11:00-11:30	Dr Ray Littler <i>Statistical Process Control in a data-rich environment</i>
11:30-12:00	Dr Chin Diew Lai <i>What is Statistical Reliability Theory?</i>
12:00-12:30	Lunch
12:30-14:00	NZSA AGM
14:00-15:00	Professor Sandy Thayer <i>Predicting Mean Time to Failure from field data</i>
15:00-15:30	Afternoon Tea
15:30-16:00	Dr Selwyn Gallot <i>Applied Reliability Modelling</i>
16:00-16:30	Dr David Rhoades <i>Statistical methods in earthquake hazard and risk studies</i>

The cost of the registration for the day is \$12. Of course attendance at the AGM is free! The cost includes morning and afternoon teas but not lunch. If you are interested in attending this day please complete the details in the box and post to our PO Box 1731, Wellington by **Friday 24 April**.

New Zealand Statistical Association
PO Box 1731, Wellington

Name: _____

I am attending the one day meeting on
Friday 15 May.

I have / have not enclosed a cheque for \$12

If you have any questions about the day, or items for the AGM please ring the Secretary, Alistair Gray at 04-495 4685, or email him at agray@stats.govt.nz.

Abstracts of talks

Predicting Mean Time to Failure from Field Data

*Professor Sandy Thayer
Department of Mechanical Engineering
Colorado State University*

A description of the background and procedures used to predict the Mean Time to Failure (MTTF) of the drive motor used to power ventilators used to assist patients in hospitals and at home breathe. A ventilator in the US is licensed by the US Food and Drug Administration (FDA) and requires periodic overhaul by the manufacturer to ensure that 'no' failures occur while connected to users. Maintenance data were available on all units manufactured over a 10 month period and these data were analyzed to predict the MTTF and the appropriate maintenance interval to have a 50 percent confidence that not more than a given percent would fail prior to that maintenance overhaul. The manufacturer wanted to substitute a motor of a new design which was not significantly better than the existing motor. This led to the analysis of predicting the MTTF when zero failures are observed during a reliability test.

Background and current status of Statistical Process Control (SPC) from the point of view of a Yank

Professor Sandy Thayer

The Japanese have demonstrated the success of SPC and many are attempting to mimic the Japanese even though SPC did not originate in Japan. The discussion will include the concepts of control charts to estimate where the manufacturing process is currently centred, where it has been in the past and whether or not the process is maintaining statistical stability. Also included will be a discussion of attribute, variable and continuous sampling plans and reliability plans.

What is Statistical Reliability Theory?

Dr Chin Diew Lai

Department of Statistics, Massey University

In this talk we give a bird's-eye view of the subject on statistical reliability which is somewhat related to survival analysis of life data. While the former is applicable to engineering the latter is applicable to medical research.

We shall discuss different types of systems, structure functions of systems and components, representation of a system in terms of paths and cut sets, survival functions (probabilities), hazard rate (failure rate), concepts of ageing, lifetime distributions, mean time to failure, bounds on system reliability, types of dependence among components, replacements and maintenance, and statistical analysis of lifetime data.

Statistical Process Control in a Data-Rich Environment

*Dr Ray Littler
Waikato Centre for Applied Statistics
University of Waikato*

Many modern manufacturing and packing processes, such as those in the NZ dairy industry, are capable of providing comprehensive process data on computer. This data resource may be used for automated process control, process documentation, and process improvement. The role of statistical process control techniques, and indeed statisticians, in these environments will be examined with reference to some projects currently in progress. Some ideas on how statisticians can avoid confusing their industry clients are also canvassed.

Statistical Methods in Earthquake Hazard and Risk Studies

*Dr David A Rhoades
Applied Mathematics Group
DSIR Physical Sciences, Wellington*

Earthquake risk - the probability of damage to structures as a result of earthquakes - is a product of the underlying seismological hazard and the vulnerability of the structures. The estimation of vulnerability is relatively straightforward, although relevant data are often lacking. The Poisson process, despite deficiencies, is the model most commonly used for seismic hazard. The wide use of models incorporating time variation of hazard is currently hampered by both a shortage of reliable data on the largest events and divergent ideas about whether randomness, clustering or regular spacing of events is the dominant feature. However research into earthquake precursors could greatly refine the variation of hazard in time and space. The application of statistical methods in this field is fraught with pitfalls. The contribution of statisticians, working alongside other professionals, is therefore essential for progress, particularly in the formulation and testing of hypotheses.

Applied Reliability Modelling

*Dr Selwyn Gallot
Applied Mathematics Group
DSIR Physical Sciences, Wellington*

Probability of failure and lifetime distributions are central concepts in the field of reliability. The use of stochastic processes is less common but is often the most useful methodology for modelling risk and reliability. This talk will describe in a nontechnical way, models of these kinds which have been developed and applied at AMG in recent years. Examples arise in engineering structural design, aircraft engine performance, air pollution and rail transport.

XVIIth International Biometric Conference

Hamilton, New Zealand, 7-11 December 1992

Provisional programme for invited papers

Topic	Speakers & Titles	Session Chairperson
Design and analysis of large-scale field experiments	H. D. PATTERSON (UK) Design and analysis of series of crop variety trials P. D. JOHNSTONE (New Zealand) Design and analysis of a series of fertilizer trials	R. Kempton (BR)
Biometry in human genetics and plant genetics	R. C. ELSTON (USA) Linkage analysis of quantitative traits in Humans S. KNAPP (USA) Gene mapping in plant breeding	E. A. Thompson (WNAR)
Extensions of generalized linear models	J. P. PALMGREN (Finland) Use of exponential family non-linear models in medical research K.-Y. LIANG (USA) Extensions of generalized linear models in the past two decades: overview and some biomedical applications	A. J. Dobson (AR)
Statistical needs for developing countries	J. RILEY (UK) Biometrical perspectives under global change S. NOKOE (Kenya) The status of statistics and computing in Eastern and Western Africa	N. Goodchild (AR)
Consulting and collaboration	D. J. HAND (UK) The reality of applied statistics J. DERR (USA) How to increase effectiveness in statistical consulting and collaboration?	P. Dagnelie (RBe)
Bayesian monitoring of clinical trials	T. A. LOUIS (USA) Bayesian methods for clinical trials: with an example from AIDS research	D. O. Dixon (ENAR)
Interface of geographic information systems and statistical analysis tools	M. BERMAN (Australia) Some statistical problems arising in the analysis of image data B. W. TURNBULL (USA) Tests for disease clusters about putative sources of hazard: application to TCE contamination and Leukaemia in up-state New York	P. J. Diggle (BR)
The AIDS epidemic: past, present, future	N. G. BECKER (Australia) AIDS incidence data: projection backwards and forwards K. DIETZ (Germany) Dynamic AIDS models - have they explained anything?	L. Billard (ENAR)
Use of computers to design experiments	B. SCHNEIDER (Germany) A PC program for sequential designs J. P. VILA (France) Optimal designs of experiments by stochastic optimization	D. Rasch (DR)
Statistics in ecology and environmental science	J. N. R. JEFFERS (UK) The role of biometry in environmental decision support G. P. PATIL (USA) Environmental sampling and statistical modeling with examples	I. Yoshimura (JR)

Information: Jean-Jacques Claus-triaux (RBe), Statistique et Infor-matique, Avenue de la Faculté d'Agronomie 8, B-5030 Gem-bloux, Belgium; telephone: +32 81 62 25 12; fax: +32 81 61 45 44; telex: 59482 B-FSAGX; email: clausstri@bgxfsa51 on EARN.

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XVIth IBC contributed papers: call for abstracts

The 1992 Programme Committee of the International Biometric Society invites submission of contributed papers for the 1992 Conference to be held from 7-11 December in Hamilton, New Zealand. Contributed papers may be offered on any topic of biometric interest in an oral session or in a poster session.

Oral Sessions consist of an oral presentation of fifteen minutes (plus five minutes for discussion) in a session with four to six other related papers. Several sessions will run concurrently, and the programme will be designed to allow the varying interests of the delegates to be met. Two overhead projectors, a slide projector and blackboards will be available. Please indicate on the submission form if you also need video (VHS) projection, Macintosh SE or LC, or IBM compatible PC 286 or 386 (with VGA or EGA) projection (using a black and white LCD projection panel on an overhead projector), as these may not be available in all lecture rooms.

Poster Sessions will be held in a centrally located hall. A board will be provided to display each poster. Each poster session runs for several hours and encourages interaction with the author. A Macintosh SE or LC, or IBM compatible PC 286 or 386 will be available, if requested on the submission form, for those wishing to show their work more dynamically, or for demonstrating original non-commercial software. (Commercial software may be demonstrated in exhibitions.)

For each oral or poster contribution an abstract must be prepared, following the abstract preparation instructions, and sent to the IBC '92 Secretary, to arrive by 1 July 1992. We will send an acknowledgement to the contact author. To expand programme participation the number of contributed papers is limited to one per registrant. If too many papers are submitted for an oral session some papers may be shifted to a poster session. The contact author will be informed of this in good time.

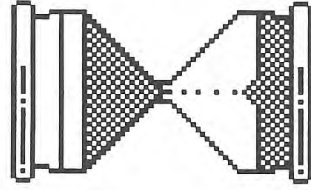
Exhibition Booths for professional associations and technical displays including computer software, statistical packages and books can be arranged. If you would like a booth please contact the IBC '92 Secretary, giving details of your exhibit.

Abstract Preparation Instructions

We will publish the abstract as submitted by the author(s). To ensure that your abstract is well presented please follow these guidelines and the sample abstract.

1. Abstracts must be typed or laser printed on the abstract form or a clean copy of it.

2. Use the full width of the abstract box. Any material outside the box will not



4. Use at least a 12 point font (Times is preferred), as the abstract will be reduced to 71% of its original size when published.

5. The abstract should state concisely the methods and results of the paper. References and graphs may be included.

6. Abstracts must be in one of the official languages of the Biometric Society: English, French or German.

7. Each submitted abstract must be accompanied by the completed submission and registration forms with the registration fee of at least one author.

8. The abstract, submission and registration forms should be sent (to arrive by 1 July 1992) to: IBC '92 Secretary, Ruakura Agricultural Centre, Private Bag 3080, Hamilton, New Zealand. ■

be published. Conversely, ANY material inside the box WILL be published.

3. Type the title of the paper, in capitals, centred, at the top of the box with the author(s) name(s) and affiliation(s), centred immediately below.

Sample abstract – not to scale

RELATIONSHIP BETWEEN PLANT AND STEM SHAPE OF SOYBEAN (*Glycine max* L. Merr) ANALYZED BY IMAGE PROCESSING.

S. Ninomiya
Fac. Agr., Univ. Tokyo, Tokyo 113, Japan
I. Shigemori
Nagano Chushin Agr. Exp. Stn., Shiojiri, Nagano 391-64, Japan

The plant shape of soybean (*Glycine max* L. Merr) is one of selection objectives as it is related to light interception of canopy, lodging resistance, etc. However, the selection of the "good shape" has been made only empirically by human eyes because there hasn't been any quantitative measure for it. Ninomiya and Shigemori (1989) suggested that the marginal frequency distributions of 2-D silhouettes of soybean measured by image processing clearly reflected several types of the whole-plant and the stem shape and that those distributions together with several new characters measured from the image data could be useful for evaluating soybean shape.

In this study, the relationship between the shape of the whole plant and the stem of soybean was investigated by the same procedure. Soybean plants were cut at the node of cotyledon and the whole plant and the stem of the same plants after the leaves and the petioles were removed, were video-taped. The analog video-image was converted to the digital image by the image-processing unit (nexus 6400 series, 512 x 480 pixels x 4 plane, 8 bits per pixel). Then, only the plant-shape silhouettes were extracted by thresholding of the original image and scanned both vertically and horizontally to obtain the horizontal and vertical frequency-distributions respectively (Fig. 1). In addition to the parameters for both of the distributions such as mean, variance and higher central moments, the width, height, position of the main stem, discrepancy of the main stem from X-mean and area of the silhouettes were measured from the image data (some of them were proportionally transformed so that the height of the silhouettes became the same among all the plants). 176 varieties (5 plants for each variety) were examined in this way.

No systematic relationship between the vertical distributions for the whole plant silhouettes and the stem silhouettes was found while the horizontal distributions for the stem were similar to those for the whole plant (the feature of the distributions was usually exaggerated in those for the latter). For example, the correlation coefficient between the corresponding vertical distributions spreaded in wide range (Fig. 2). This indicates that the vertical distribution of the stem is not related to the vertical distribution of the whole plant (the silhouette of the whole plant is mainly the projection of the leaves), while the horizontal distribution of the stem is, more or less, related to the horizontal structure. Usually, the soybean breeders select the "good shape" plants by observing the stems. However, the results of this study indicated that it is not possible for them to "imagine" how the plants are in summer by evaluating the stems in autumn. In fact, the scores to the stem shape given empirically by the breeders' eyes were not highly correlated with those to the whole plant shape.

REFERENCES
Ninomiya, S. and Shigemori, I. (1989). Evaluation of whole plant shape and stem structure of soybean (*Glycine max* L. Merr) by image analysis. Proc. the 6th Internat. Congr. SABRAO (the Society for the Advancement of Breeding Researchers in Asia and Oceania), 689-692.

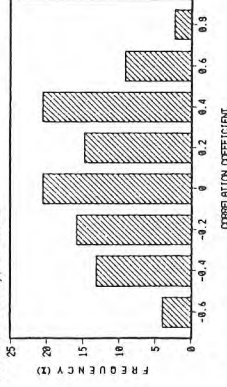
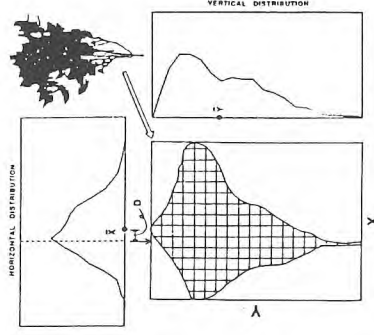
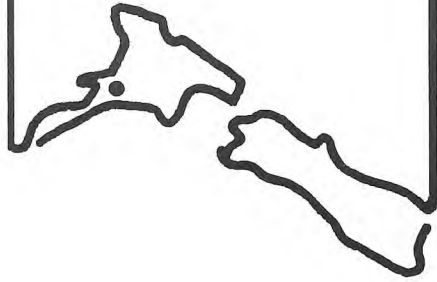


Fig.1 (left) 2-D silhouette of soybean plant (binary image) is vertically divided into 20 segments and area of each segment is measured by image processing to obtain the horizontal frequency distribution (X). The same procedure was applied horizontally to obtain the vertical distribution (Y). The dashed line and D indicate the position of the main stem and the discrepancy of the main stem from X-mean respectively.

Fig.2 (above) The frequency distribution of the correlation coefficients between the vertical frequency of the whole plant silhouette and the stem silhouette.



1992 (XVIth) International Biometric Conference

Hamilton, New Zealand

7-11 December 1992

IBC92 Secretary

Ruakura Agricultural Centre

Private Bag 3080

Hamilton, New Zealand

Phone 64 (7) 856 2839

Fax 64 (7) 838 5012

E-mail (internet) ibc@ruakura.maf.govt.nz

General Information

Registration forms are inserted in this *Newsletter*.

Registration

To attend the conference sessions and receive the conference proceedings you must have full or student registration. All registrants (including accompanying persons) get a conference satchel, entry to the opening reception and may participate in the accompanying persons tour programme. Registrations cancelled before 1 November will be refunded, less a 10% administration charge.

Accommodation

Conference accommodation is available in the Halls of Residence on the University campus or in the Ambassador Motor Hotel. You are also welcome to reserve accommodation for periods before and after the conference.

University Halls of Residence

The Halls are within two minutes walk of the Conference Centre and provide good accommodation for individual delegates. Each room has a single bed and a study desk. (Bath and toilet facilities are shared by approximately 6 people.) Breakfast in the Hall dining room is included in the accommodation charge.

Ten self-contained cottages, each with 4 single bedrooms, kitchen, lounge, dining, bathroom and toilet are \$NZ 80 per cottage per night. If you would like a cottage please check with the IBC Secretary before you register as they may all be gone!

Ambassador Motor Hotel

Units are of varying size (twin or double beds with extra single beds) with bathroom, toilet, television and telephone. Some units also have kitchens. Breakfast can be provided at extra cost. The motor hotel is near the main shopping centre of Hamilton and is 4km from the Conference Centre. Transport to and from the Conference will be provided. Approximate daily rates for the units will be: single \$NZ 78, double or twin \$NZ 90, additional person \$NZ 15.

To reserve a unit at the Ambassador, include a deposit of \$NZ 10 per night with your registration. The balance of the account is to be paid directly to the Ambassador on arrival. Late requests for hotel accommodation may have to be placed elsewhere.

University accommodation bookings cancelled before 1 November will be refunded, less a 10% administration charge. The motor hotel deposit will not be refunded.

Meals and Social Programme

Monday: Opening ceremony and lunchtime welcoming reception.

Evening meal at the University.

Tuesday: Cultural function. Likely to be evening on a Marae including traditional Maori food and entertainment.

Wednesday: Mid-conference tours.

Evening meal at University.

Thursday: Conference dinner at a vineyard and winery featuring a spit roast and local wines.

Friday: Closing dinner at the University.

Morning and afternoon teas and lunch (midday) will be served near the exhibition area. Order tickets for lunch, evening meals and functions on the registration form. Bar facilities are available.

Mid-conference tours

Wednesday 9 December. All tours include lunch. We encourage local statisticians to go on a mid-conference tour. It should be a great day!

Auckland Drive north to Auckland, City of Sails. The first stop is on top of Mt Eden, an extinct volcanic peak, for views over the city, then visit the Auckland Museum which boasts a large collection of Maori and Polynesian artefacts including a huge carved war canoe. Lunch today aboard a sailing catamaran on the Auckland Harbour. In the afternoon visit Kelly Tarlton's Amazing Undersea World returning to Hamilton in the late afternoon.

Rotorua Rotorua is famous for its thermal activity. At Whakarewarewa see the geysers and mudpools and visit the Maori Arts and Crafts Institute to learn about New Zealand's Maori culture. See the beautiful Fairy and Rainbow Trout Springs and the performing sheep at the Agrodome. Lunch at the Skyline restaurant accessed by gondola.

Waitomo See limestone stalactite and stalagmite formations and take the boat trip into the Glowworm Grotto. At Otorohanga visit the kiwi house and lunch at a kiwifruit orchard. At Te Awamutu visit a beautiful carved Maori meeting house and amble through the delightful rose gardens.

Mt Tongariro Travel south to Tongariro National Park. Here there are 3 volcanic mountains. Walk one of the alpine trails (led by Peter Johnstone). The planned route will take you past hot springs and fumaroles, old lava

flows, streams, mountain flowers, moonscapes and volcanic craters and lakes. The day will be a long one. Five to six hours will be spent travelling by bus and a similar time will be spent walking. You will need to be fit. Although the walk can be done in light boots or running shoes, most of the route is exposed to the weather which can be unpredictable. You will need a day pack (boxed lunch provided), warm clothing (including hat and gloves) and a rainproof jacket. On hot days sunblocks and sunhats are advisable. If the weather is unsuitable on the day another interesting more sheltered route will be walked. Return via Taupo stopping to have dinner (at own cost) and bathe in the hot thermal pools (bring swimsuits) if there is time.

Black Water Rafting An adventure! Float through underground streams with a rubber ring around your waist. Excellent limestone formations, glowworms. Bring swimsuits and old sneakers. Wet suits and cavers helmets provided. Limited to 3 parties of 12 people each. Afterwards lunch at the Waitomo Hotel and visit the Otorohanga kiwi house.

Accompanying persons programme

As well as the mid-conference tour we have arranged a series of activities during the conference for conference registrants. Places on selected tours (subject to minimum numbers) may be reserved on the registration form with payment included.

Sunday: Half Day tour of Hamilton including the Hamilton Rose Gardens and the Waikato Museum of Art and History.

Monday: Opening ceremony in the morning and Welcoming reception for lunch.

Half day tour of Hamilton in the afternoon.

Tuesday: Auckland (as in mid-conference tour) or Golf (including transfers, green fees, hire clubs, hand carts and a light lunch) in the afternoon.

Thursday: Rotorua (as in mid-conference tour).

Friday: Luncheon Cruise on the paddleboat MV Waipa Delta as you cruise the Waikato River through Hamilton. Transfers between the hotel or University and jetty included or Golf.

Pre and post conference tours

Special pre and post IBC92 Conference tours have been arranged. If you would like to receive the glossy brochure detailing these tours please tick the appropriate place on the registration form. If you would like brochures to send to colleagues who you are encouraging to come to NZ for IBC92 and its satellites please let us know.

IBC92 Local Organising Committee

Chairperson: Ken Jury
 Scientific programme: Nye John
 Finance: David Johnson
 General Secretary: Harold Henderson
 Neil Cox, Catherine Cameron, Bill Bolstad,
 Murray Jorgensen, Ray Littler, Martin Upsdell,
 Brian Wickham, John Waller

Biometric Society region president



Nye John, Waikato, is the new President of the 160 members of the Australasian Region of the Biometric Society. David Fletcher, Otago, continues as treasurer and Brian Cullis, NSW, continues as secretary. This region is hosting IBC92 at Waikato in December.

We extend our sympathy to Shayle Searle on the death of his wife, Helen, in February. Shayle and Helen enjoyed the first half of 1990 at the University of Auckland. Shayle, a New Zealander, has been at Cornell University for 30 years. Shayle was interviewed in the July 1990 Newsletter.

NZSA Women's Suffrage Year Committee

A sub-committee of the NZSA was formed after the annual conference last year to look at what the NZSA could do to celebrate Women's Suffrage year in 1993. We put together a proposal which we submitted to the Women's Suffrage Trust, and have been given an initial grant of \$6000.

What we are proposing to do is to organise a series of displays around the country to encourage the use of statistics, and promote the role of numerate women in society. We hope to show famous women statisticians, some history of the changing role of women and men using statistics, and organise activities showing how statistics are relevant to women.

Our initial grant is to do some of the background research for this project. We now have to make another submission for funds to actually carry out the displays.

Members of the group currently are Sharleen Forbes, Jean Thompson, Sarah Crichton, Helen Stott, Kay Goodger, and Sandy Wright. Karen Wong who has now gone overseas, did most of the work on the original proposal. The Department of Statistics and our other employers are contributing some of our time to assist. Anyone who is interested in knowing any more about our activities or assisting with the work is welcome to contact us.

Helen Stott, Dept of Statistics

Members' News

Otago

Bryan Manly was in Colorado in January running a workshop on the statistics of resource selection for biologists in Durango as well as finishing a book with U.S. colleagues. In April he is going to visit the University of Tampere in Finland to give some talks on ecological statistics and is an invited speaker for EURING 92 (on statistical methods for bird banding data) in Montpellier. Then after returning to New Zealand for three weeks he is off to Penn State University for an invited talk at the 7th International Conference on Multivariate Analysis followed by a week in Bogota, Colombia, giving a series of lectures at the National University on computer intensive statistics in biology.

Laimonis Kavalielis returned to the Australian National University for four weeks during November and December to continue his research in time series analysis with Ted Hannan.

In February, in a farewell tour, John Rayner gave talks on recent work on smooth S-sample goodness of fit tests at Canterbury, Victoria and Massey Universities. He leaves for Woolongong in May.

Russell Millar, from Canadian Fisheries in Newfoundland (and Auckland BSc(Hons) class of 1981 - ed), will take up his appointment in May, as a replacement for Malcolm Faddy.

Laimonis Kavalielis

Massey

The Statistics Department is well established in its new location and feeling so secure that 1992 is turning into a year of travel. Dick Brook is in Europe, Charles Lawoko has just returned from Brisbane and China, Doug Stirling is in Woollongong and Chin Diew Lai is in China. Later in the year Jeff Hunter leaves on a Claude McCarthy scholarship to USA and UK studying statistical advisory units, and Ganesalingam leaves for a sabbatical year in Singapore and Reading, UK. Travel is not all outwards however. Our third Fulbright Professor, Sandford Thayer has arrived from Colorado State University, Fort Collins. Sandy has expertise in quality control and reliability engineering, and he will be helping us extend our knowledge in those areas. He will be travelling New Zealand, including the Mathematics Colloquium/NZSA Conference in May, and is looking forward to meeting other New Zealand mathematicians and statisticians.

Greg Arnold

VUW ISOR

The summer has gone and term time is upon us once more. At Victoria this has a very pronounced effect due to the small campus and most public areas are heaving with people. However up on level 5 of the new Cotton Building ISOR remains a well kept secret and most undergraduates haven't ventured this far yet. Over the summer we have struggled manfully (or personfully) with such matters as network installation, furnishing offices, setting up laboratories and of course the fire which hit the Mathematics Laboratory on level 4. After 5 months of occupation we are just about in full working order. The major achievement has been the illegal conversion of the library into a tea-room.

On to more statistical matters, we have six visitors on board: Ian Evett (Forensic Science), Wang Qiang (Meteorology), Murray Cameron (Time Series Analysis and ECGs), Zhu Nan (Operations Research) and Tohru and Valerie Ozaki (Non-Linear Time Series).

Our recent appointments, Ray Brownrigg (Systems Manager), Gurusingham Sathiyandra (Statistical Programmer), Pauline Aranui and Anne-Marie Bourke (Secretaries) and Matthew Hobbs (Assistant Lecturer) have extended our capabilities substantially and it is already difficult to remember how the group functioned without them. Our best wishes go to Andrew, Deborah, Inga and Lorraine who all left over the summer. Their participation in all of the ISOR events will be greatly missed.

On the research front Peter Thomson is on sabbatical and will shortly be leaving for the UK. Tapas Sarkar has recently returned from India and Tony Vignaux is heading towards maximum entropy at a Conference in Paris. Peter Smith is attending a Bayesian Conference in Nottingham, despite knowing nothing about the good reverend.

Finally at this time of cricketing triumphs we would like to alert the New Zealand selectors to the performance of the ISOR staff team who slammed their way to 25 all out in a game against the students.

Peter Smith

Canterbury

Prof John Deely is on leave in North America and Europe until August 1992.

Profs Steve and Myra Sammuels from the Statistics Department, Purdue University, are visiting the department until May 8. Steve is on a Visiting Erskine Fellowship and is giving a series of talks on Sequential Selection Based on Ranks (Secretary) Problems.

Murray Smith

Waikato and Ruakura

Alan Gleeson, from Biometrics NSW Agriculture, visits in the first week of April and presents a one day workshop on Spatial methods for field trials. The following day MAF statisticians meet for their last *MAFStat* before they move into CRIs. Nye John collaborated with CSIRO in Canberra and David Whitaker with John Eccleston at Bond University for two weeks in February. Nye visits Joiner Associates in Madison in June. Bill Bolstad is going to the ASA meetings in Boston in August.

DSIR Applied Maths Group, Mt Albert

The four Mt Albert staff expect to transfer, along with the Wellington Applied Maths group, into the Industry Development Crown Research Institute. Almost all scientists for whom we undertake work will transfer into the Horticultural Institute. We expect that our work with these scientists will continue.

In February, with the help of Kay McMath from the Fruit & Trees Sensory Science section, we ran a three-day course on the Design and Analysis of Sensory Experiments Sensory Evaluation. Twelve participants were from the milk products industry, with about an equal number of DSIR scientists.

John Maimondald

Auckland

Alastair Scott has returned to take up the reins as HOD after a sabbatical that saw him at Southampton, Carleton and Berkeley. Two new statisticians have joined the team, Constance Brown and Robert Gentleman. Constance has just finished her PhD in time series at Harvard while Robert will beef up our statistical computing expertise. We also have a senior lectureship coming up in TQM. Brian McArdle has returned from leave in UK. On a romantic note, George Seber has recently become engaged and Peter Mullins went all the way and got married!

Email changes

To the 11 Nov 91 sheet in the November 91 *Newsletter*

Auckland

Alastair Scott scotti@mat.aukuni.ac.nz
Hamilton & Rotorua

Add Sue Carson carsons@mof.govt.nz

Graham McBride mcbride@waikato.ac.nz

Delete Hamish Spencer

Palmerston North

Helen Dick dickh.flockh@chpc.dsr.govt.nz

Wellington

June Atkinson atkinsop@chpc.dsr.govt.nz

Max Wigbout wigboutm.ho1@chpc.dsr.govt.nz

Christchurch

Add Patrick Graham pgraham@chmeds.ac.nz

Dunedin

Add Hamish Spencer hspencer@otago.ac.nz

Satellite Conferences to IBC92

A number of conferences and workshops have been planned around IBC92. Further information will be published in the next *Newsletter*, may be requested on the IBC92 registration form, or may be obtained by contacting the organiser of each conference.

Satellite meeting on Biostatistics

30 November to 2 December 1992, Centre for Clinical Epidemiology and Biostatistics, University of Newcastle. Topics include: statistical analysis of pedigree data, statistical aspects of clinical trials and other topics in biostatistics. For further information contact:

Professor Annette Dobson, Department of Statistics, University of Newcastle, Newcastle, NSW 2308, Australia Phone +61 (49) 215 544, Fax +61 (49) 684 742

Molecular Evolution Workshop

Bruce Weir is organising a workshop in Molecular Evolution for **2-4 December, 1992**. It will be held in Rotorua at the Forest Research Institute, and will be named in honour of the late Allan Wilson. For more information contact:

Dr Bruce Weir, North Carolina State University, Raleigh NC 27695-8203, USA. Email nbsweir@ncsumvs.bitnet

Practical Applications of the Bootstrap

2-4 December 1992 at Australian National University in Canberra. Keynote speakers include Rudolf Beran, Berkeley; Richard Olshen, Stanford University; Nick Fisher, CSIRO, Sydney; Tom Louis, University of Minnesota (Biostatistics); and Peter Hall, ANU. For more information contact:

Dr. Kim-Anh Do, Statistical Sciences Division, CMA, Australian National University, Canberra, ACT 2601, Australia, Phone +61 (6) 249 0564 or +61 (6) 258 1708 Fax +61 (6) 249 5549 Email dokstat@durras.anu.edu.au

Analysis of repeated measurements

data: an overview

3-4 December 1992 in Hamilton. The workshop will be led by Mike Kenward of Reading University, an authority on the subject, and author of a number of important papers in this area. The aim is to provide a forum for the presentation and discussion of the many approaches and problems associated with analysis of repeated measurements data. It should therefore be of interest to statisticians in many different application areas. For more information contact:

Dr David Fletcher, Department of Mathematics & Statistics, University of Otago, Box 56, Dunedin, Fax +64 (3) 479 8427, Phone +64 (3) 479 7890, Email dfletcher@otago.ac.nz

IBC92 satellite conferences

International Workshop on Matrix Methods for Statistics

4-5 December 1992, University of Auckland. Co-sponsored by the International Linear Algebra Society (ILAS) to foster the interaction, in an informal setting, of researchers in the interface between matrix theory and statistics. We propose that there be no parallel sessions, and that all, or almost all, the talks be of 20 minutes duration. Garry Tee (Auckland) has been invited to talk about the work of Alexander Craig Aitken (1895-1967), and his plans to publish Aitken's Collected Papers. We plan to charge a US\$20 registration fee.

We would like to know who is coming and who is giving a talk by June 30, and would like title and abstract by 31 August 1992. If you are interested in participating in this workshop please contact: George PH Sytan, Dept. of Mathematics and Statistics, McGill University, Burnside Hall 1240, 805 ouest, rue Sherbrooke, Montreal, Quebec H3A 2K6, Canada; Fax: +1 (514) 398-3899 Email: mt56@musica.mcgill.ca.

Dynamic graphical analysis of statistical models: short course

Professor R Dennis Cook, University of Minnesota, will conduct this short course on Sunday 6 December 1992, at the University of Waikato. He is a leading authority on the use of modern graphical methods in analyses based on statistical models. Graphical methods will be demonstrated on a Macintosh using XLISP-STAT, a graphics programming environment developed recently by Luke Tierney, University of Minnesota. This environment allows easy access to virtually all the modern graphical methods - high dimensional rotation, animation, brushing, linking, identification, touring, slicing and so on. New theory and methods for graphical data analysis will be explored. An important feature of Professor Cook's work is utilising and developing new methods to create practical, usable tools for consulting statisticians.

Participants will receive information on how to obtain XLISP-STAT, without charge, for Macintosh, PC or Unix. More information may be obtained from the IBC92 secretary. You may register for this short course (\$NZ 75) now on the IBC92 registration form.

Methods for correlated data: current research

14-16 December 1992 in Queenstown. The focus will be on current research in different aspects of the analysis of correlated data, with emphasis on applications in epidemiology and medicine. We hope to draw together statisticians currently working in the area to discuss some of the issues. Invited speakers will include Professor Norman Breslow, University of Washington, Seattle, Dr. Michael Kenward, University of Reading, and Professor Alastair Scott, University of Auckland. Specific topics will include methods for discrete data or survival data, repeated measurements, estimating equations and random effects models.

For further information contact Dr Katrina Sharples, Department of Preventive and Social Medicine, University of Otago Medical School, Box 913, Dunedin. Email katrina@otago.ac.nz, Fax +64 (3) 479 0529, Phone +64 (3) 479 7221.

2nd Australasian Genstat Conference

This is the second international Genstat conference to be held in Australasia. The conference aims to provide a forum for Genstat users to report on their research and consulting using Genstat, to exchange ideas, make suggestions, and to see the latest Genstat developments.

The Conference will take place at the Forest Research Institute, Rotorua. Participants may register on the evening of Sunday 13 December or first thing on Monday morning, and the conference will end at midday on Wednesday 16 December. Registration (which includes lunch, tea and coffee and a Sunday evening reception) will be NZ \$180 before 1 September 1992, and NZ \$220 thereafter. Accommodation will be available in student hostels at a cost of about \$100 per person for three nights; alternatively participants can book their own accommodation at local motels.

The Programme will contain invited and contributed papers on new statistical facilities in Genstat, developing statistical methods using Genstat, innovative applications of Genstat, use of Genstat for teaching and future developments.

Potential contributors should send a one-page abstract to Roger W Payne or David B Baird by 1 May 1992. Accepted contributions will be notified by 1 June 1992. For further information and a registration form, please contact: Roger W Payne, Statistics Department, Rothamsted Experimental Station, Harpenden, Herts, AL5 2JQ, UK (Email: Payne@resa.afrc.ac.uk) or David B Baird, MAF, PO Box 24, Lincoln. (Email: Bairdd@chpc.dsrir.govt.nz).

REGISTRATION FORM

XVIth International Biometric Conference Hamilton, New Zealand, 7-11 December, 1992

Given Name:	Family Name:
Name for name tag:	
Mailing Address:	
Institution:	
Fax:	Phone: Email:
Names of People Registering as Accompanying Persons:	

1. REGISTRATION

Full Conference Registration: _____ people (\$NZ 300 before 1 September 1992) (\$NZ 350 after 1 September 1992)	Total
Student Registration: _____ people (Verification from University must accompany registration) (\$NZ 150 before 1 September 1992) (\$NZ 175 after 1 September 1992)	\$
Accompanying Person Registration: _____ people (\$NZ 30 before 1 September 1992) (\$NZ 35 after 1 September 1992)	

2. ACCOMMODATION DETAILS

I wish to reserve accommodation from _____ to _____ December (check in day & date) (check out day & date) for _____ people.	Total
Type of Accommodation: University Halls of Residence (Single rooms only) (_____ nights at \$NZ 40 per night bed/breakfast) Motor Hotel (deposit*: _____ nights at \$NZ 10 per night) Room type (Single/Double/Twin) * Balance (approx \$NZ 70-80 per night) to be paid to the Motor Hotel on arrival.	\$

3. MEALS

Lunch (\$NZ 10) required for: _____ people on Tuesday, _____ people on Thursday, _____ people on Friday.	Total
Tickets required for: _____ people to the cultural function (\$NZ 50) on Tuesday night _____ people to the conference dinner (\$NZ 70) on Thursday night.	\$
University evening meal (\$NZ 20) required for: _____ people on Sunday, _____ people on Monday, _____ people on Wednesday, _____ people on Friday.	

4. MID-CONFERENCE TOURS (Wednesday 9 December, lunch included)

Auckland	_____ people at \$NZ 80	Total
Rotorua	_____ people at \$NZ 75	\$
Waitomo	_____ people at \$NZ 70	
Tongariro	_____ people at \$NZ 70	
Black Water Rafting	_____ people at \$NZ 120	

5. ACCOMPANYING PERSONS TOUR PROGRAMME

Sunday Hamilton	Monday Hamilton	Tuesday Auckland	Tuesday Golf	Total
at \$NZ 15	at \$NZ 15	at \$NZ 80	_____ at \$NZ 45	\$
Thursday Rotorua	Friday Golf	Friday River Lunch		
_____ at \$NZ 75	_____ at \$NZ 45	_____ at \$NZ 40		

6. PRE AND POST CONFERENCE TOURS

A range of pre-conference and post-conference tours around New Zealand and a 2 day tour linking the IBC and Queenstown conferences have been organised by Travel Time New Zealand; outlines of these tours were published in the May 1991 issue of the *Biometric Bulletin*. If you would like to receive the brochure detailing these tours:

_____ Tick here or fax IBC Tours, Travel Time New Zealand (64-7-838 1120)

7. SATELLITE CONFERENCES AND WORKSHOPS

Dynamic Graphics short course (Sunday 6 Dec) at Hamilton:	_____ people at \$NZ 75	Total
Biostatistics (30 Nov-2 Dec) at Newcastle, Australia:	Tick _____ for information	
Molecular Evolution workshop (2-4 December) at Rotorua:	Tick _____ for information	\$
Bootstrapping (2-4 December) at Canberra, Australia:	Tick _____ for information	
Repeated Measurements (3-4 Dec) at Hamilton:	Tick _____ for information	
Matrix methods for statistics (4-5 Dec) at Auckland:	Tick _____ for information	
Methods for correlated data (14-16 Dec) at Queenstown:	Tick _____ for information	
GENSTAT conference (14-16 Dec) at Rotorua:	Tick _____ for information	

Please list totals from section 1-7 and pay the Grand Total:

Section	1	2	3	4	5	7	Grand Total
\$NZ							\$

Remittance should be in New Zealand Dollars, payable to: XVIth International Biometric Conference (If it is not possible to send payment in New Zealand dollars, then the Local Organising Committee may request additional payment at registration time, where the equivalent amount in NZ dollars at the time of receipt of payment falls short of the total conference fee.)

Method of Payment: Bank Draft/International Money Transfer/Credit card (circle one)

International Money Transfer to : XVIth International Biometric Conference
The National Bank of New Zealand
Frankton Branch, Hamilton, New Zealand
Account No.: 060313-0076233-00

Credit Card: MASTERCARD/VISA (delete one)

Card Number:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Cardholder's Name:

(Please print as shown on card)

Cardholder's Signature: _____

Expiry Date:

Date: _____

Please return completed form with payment to:

IBC92 Conference Secretary, Ruakura Agricultural Centre, Private Bag 3080, Hamilton, New Zealand
Fax: 64-7-838 5012 E-mail (Internet): IBC@Ruakura.maf.govt.NZ

XVIIth IBC - Contributed papers: SUBMISSION FORM

(Read carefully Abstract preparation instructions)

Contact Author

Given Name:

Family Name:

Mailing Address:

Fax:

Email:

Title of Paper

Additional Author(s)

Type of contribution

Oral Session
for which I will need the following equipment:

Overhead projector(s)
 Slide projector
 PC 286 or 386 with projection to screen
 Macintosh SE or LC with projection to screen
 Video (VHS)

I wish to present my contribution in:
 Poster Session
for which I will need the following equipment:

PC 286 or 386
 Macintosh SE or LC

Please tick the relevant category or categories of your paper in each section.

A. General

Theory and Methods
 Applications
 Reviews
 Educational

B. Methodology

Linear models
 Nonlinear models
 Generalised linear models
 Spatial statistics
 Multivariate analysis
 Estimation
 Robustness

Sampling
 Experimental design
 Stochastic processes
 Survival analysis
 Modelling
 Simulation
 Other (.....)

Exploratory data analysis
 Bioassay
 Risk analysis
 Graphical methods
 Image processing
 Time series

C. Application

Agriculture and horticulture
 Plant breeding
 Animal breeding
 Biology
 Other (.....)

Molecular genetics
 Human genetics
 Numerical taxonomy
 Law

Clinical trials
 Epidemiology
 Pharmacology
 Physiology and medicine

Ecology & resource management
 Environment
 Meteorology
 Industry



XVIth IBC - Contributed papers: ABSTRACT FORM

(Please follow carefully the Abstract preparation instructions)



Please return by 1 July 1992 to
IBC92 Secretary, Ruakura Agricultural Centre, Private Bag 3080, Hamilton, New Zealand
