New Zealand Statistical Association (Inc.)

newsletter

ISSN 0112-2649

September 1986

Number 12

DUNEDIN WINS BID FOR ICOTS III

A team of eleven New Zealanders attending ICOTS II (the Second International Conference on Teaching Statistics) in Canada have secured ICOTS III for Dunedin, New Zealand in 1990. The delegation, led by Bryan Manly and Sharleen Forbes was ably supported by Andy Begg, Lynette Holland, Bruce Miller, Hugh Morton, Dave Saville, John Sealy, Fay Sharples, Murray Smith and Graeme Wood with assistance from Peter Thomson and David Vere-Jones back here in Wellington. They presented a thoroughly documented case which included letters of support from the Minister of Education and the Mayor of Dunedin. A short report on events appears in a separate news item elsewhere in this issue and more extensive reports on ICOTS II will be published in the November issue of *The New Zealand Statistician.*

38TH ANNUAL CONFERENCE IN CHRISTCHURCH

The 38th Annual Conference of the NZSA will be held at the University of Canterbury from Monday, 24th August, 1987 to Wednesday, 26th August. The conference is being held on those days to dovetail with the Australasian meeting of the Econometrics Society which is to be held from August 26th to the 28th, 1987.

Hostel accommodation will be available. The current cost for bed and breakfast is $23.50 per day.

The organisation of the conference will be similar to previous years. Monday and Tuesday will be the conference proper, with Wednesday available for specialist seminars. A public lecture is planned for the Tuesday night prior to the conference dinner. Suggestions for suitable speakers will be gratefully received.

For information or suggestions regarding the conference contact:

Richard Penny
Mathematical Statistics Division
Department of Statistics
Private Bag
Christchurch. Telephone: (03) 793-700

For information regarding submission of papers contact:

Conference Chairman
NZ Statistical Association
P.O. Box 1731
Wellington

As August is the height of the ski season and a trip away is great for the grey matter I hope to see you all at next year's conference.

Richard Penny

NZ MATHEMATICAL SOCIETY VISITING LECTURER—Dr Terry Speed

Dr Terry P. Speed, Chief of the Division of Mathematics and Statistics, CSIRO, Australia is to tour New Zealand in September/October, 1986 as the NZ Mathematical Society Visiting Lecturer. His itinerary will include all six university centres and he will present two or three talks in each centre. The dates and titles of his Wellington lectures are as follows:

(1) Wednesday, 24 September, 3.30 p.m., AMD Seminar Room, Room RB730, 7th Floor Rankine Brown Building, Victoria University of Wellington.

"Triangulated Graphs and their Application"—An expository talk intended to introduce these graphs and briefly outline their main properties and many applications, e.g. in probability, game theory, computer science etc.

(2) Thursday, 25 September, 7.30 p.m. Lecture Theatre 2, MacLaurin Lecture Block, Victoria University of Wellington.

"The Hidden Contribution of the Mathematical Sciences to Everyday Life"—The illustration through examples from areas such as medical imaging, robotics, communication via space satellites and space travel, of the way in which recent mathematical research underpins well-known scientific and technological achievements.

(3) Friday, 26 September, 4.30 p.m., Easterfield Conference Room, 6th Floor, Easterfield Building, Victoria University of Wellington (jointly sponsored with the Wellington Maths Assn and the NZ Statistical Assn).

"What statistics should be taught in schools?"

For dates, venues and titles of talks in other centres contact your local branch of the NZ Mathematical Society or Dr Murray Jorgensen, Department of Mathematics, University of Waikato, Private Bag, Hamilton, Telephone: (071) 62889.

N.Z. STATISTICAL ASSOCIATION EDUCATION COMMITTEE

Thanks to all the members who offered to assist with the secondary schools. It has been decided to have a two-tiered committee structure with a central committee based in Wellington and local co-ordinators providing liaison with schools and Maths Associations throughout the country. The details have not yet been finalised but a full statement of the aims of the committee and a list of members will be published in the November issue of *The New Zealand Statistician.*

Sharleen Forbes

Published by the New Zealand Statistical Association (Inc.), P.O. Box 1731, Wellington, New Zealand. Printed by Bayleys Allprint Services Ltd., Wellington.

STATISTICS PRIZES AT THE AUCKLAND SCIENCE EXHIBITION, 1986 by John Maindonald

The prize-winning entries at the 1986 Auckland Science Exhibition were:

First Prize—

Ergonomics: Suzanne Thomson and Sarah Vallings—Macleans College.

Standing height, sitting height, and upper and lower leg measurements were obtained for 30 students in each of the class ranges: Primers, Standards 1 & 2, Form 2, and Form 4. (Altogether three schools were represented). This data was then related to the furniture in actual use, and an assessment made of the proportion of pupils in each class range who fitted their furniture in each of the respects noted.

Second Prize—

Amazing: Katie Potter and Libby Boak—Westlake Girls.

Subjects were required to pass their index finger through a finger maze that was hidden from view. Laughing put them off, banter and encouragement both helped them to get through quickly, and the offer of a reward seemed to have little effect. It was not quite clear how many subjects were used in each case—were the graphs shown a sample from the total? I liked the identification of an outlier on one of the graphs—"the subject got so annoyed with us laughing that she got lost for over two minutes."

Highly Commended—

Screw Loose: Emma Dobson, Papatoetoe High School.

A torque meter was used to measure starting torque and stripping torque with a fixed size of screw but varying hole sizes. Results (in newton meters) can be summarised thus:

	Hole size (mm)		
	4.2	4.5	4.6
Starting torque	1.96	1.59	0.62
Stripping torque	5.54	3.85	1.14

In each case the frequency distribution of results from ten repeats was graphed. The standard deviations (calculated by JHM) ranged between 0.13 and 0.27. A low starting torque but high stripping torque is required.

Other entries included:

Mental and Physical Test.

This student ran 1 mile every three days for three months, recording on each occasion speed, heart-rate immediately after running and heart-rate two minutes later. Trends in the data, and particularly the substantial increase in speed in the final three months, were noted.

Astrology.

Astrologically based predictions for favourite colour, day, and number were compared with those actually favoured, for each of her 23 classmates. The predicted colour (out of 6 choices) was right in 26% of instances, day was right in 13% of instances, and number (out of 1...10) was right in 43% of instances.

Rebounding of Tennis balls.

The heights of rebound of three different makes of ball were recorded for each of four surfaces.

Clothes pegs.

Comparisons between several different makes were made for ease of use (how long did it take to hang out the washing?), force required to pull a cloth off the line, and preferences as revealed in a small survey.

Finally, brief summaries will be given for a number of other projects:

Cooling curves (for water) were compared for cups made of plastic, china, metal, pottery, etc.

Holofil, wool, green cotton and black cotton were compared for their ability to prevent heat loss from a test tube containing water?

Weights over a pulley were used to apply an upward force to plants, to see whether this will influence growth.

Results on an aptitude test were compared for 20 females of each of four different hair colours.

Plant growth was compared under red, green, blue, purple light.

Weight loss over 16 days was compared for each combination of metal (Mg, Al, Fe, Sn, Pb, Cu) and immersant (Water, salt solution, sulphuric acid).

Ideas for interesting and useful projects abound, and a look around the exhibits is worthwhile on that account alone. Where results were replicated, few pupils found really satisfactory ways of coping with presentation of results. Means or medians are often needed to show trends, with some indication (such as an average range) of the scatter in the data values from which the mean or median has been calculated.

ICOTS II AND ICOTS III by Sharleen Forbes and Bryan Manly

Many readers of this Newsletter will know by now that the Third International Conference on teaching Statistics (ICOTS III) is going to be held at the University of Otago in 1990. We have written this report to inform members of the Statistical Association how this came about, and to provide some information about the second conference in the series, ICOTS II, that has just taken place in Victoria, British Columbia.

The first ICOTS conference was held at the University of Sheffield in 1982 under the sponsorship of the International Statistical Institute. It attracted about 500 participants from 60 countries, and was considered to be a great success. As a result, in 1983 the I.S.I. Taskforces on Conferences and Education invited Jim Swift to arrange a second conference in Victoria in 1986. This also attracted about 500 participants, but the organizers were a little disappointed that these only came from 40 countries.

It is interesting that there were 15 Participants and Associates from New Zealand at ICOTS II. On a population basis this was by far the greatest national representation, and it was certainly not due to the bid being made for the next conference.

Moves to have ICOTS III in New Zealand began some time ago when John Turner, the ICOTS National Co-ordinator for the country, circulated Mathematics and Statistics departments in the universities, asking them whether they would be prepared to host the conference. Bryan Manly said "yes" on behalf of Otago, little realizing that there was any chance of this happening! It was discovered later through David Vere-Jones' contacts in the I.S.I. that the idea of having a conference in New Zealand had been well received, and was worth following up.

At that stage our energetic President, Peter Thomson, entered the scene. Together with David Vere-Jones, he oversaw the production of an extremely professional looking bid document for us to take to ICOTS II to present to Lennart Rade, the Chairman of the I.S.I. Taskforce on Conferences. Consisting of a list of reasons for holding a conference in New Zealand, tourist information, a detailed budget, and letters of support from the Minister of Education, the University of Otago, the Mayor of Dunedin and the Department of Education, this document clearly impressed everyone