INTERNATIONAL ASSOCIATION FOR STATISTICAL EDUCATION

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President IASE: Anne Hawkins

ICOTS 5 IS APPROACHING

Believe it or not, it is time to start making plans to participate in ICOTS 5, to be held in Singapore during June, 1998. Brian Phillips has announced the International Program Committee, which is listed below. Please feel free to make suggestions for the program to any of those listed. The theme for the meeting is *Statistical Education-Expanding the Network*. The major objective of ICOTS 5 is to provide opportunities for educators throughout the world to expand their network in statistical education and encourage a worldwide exchange of ideas.

In particular the conference aims to create opportunities for networking:

* technology with modern methods in the teaching of statistics;
* school and college statistical education at all levels;
* the wider community with statistical educators;
* statistical education with the forefront of statistical practice;
* the exchange of ideas for teaching statistics between and within developing and developed countries;
* educational research results and the practice of teaching statistics.

International Program Committee: ICOTS 5

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NEWS FROM THE RSS CENTRE FOR STATISTICAL EDUCATION

Dr. Anne Hawkins

The RSS Centre for Statistical Education was formally established within the Mathematics Department of the University of Nottingham on 1 August 1995, with Dr. Anne Hawkins taking up the post as its Director in October. The Centre is jointly funded (initially for five years) by the University, the Royal Statistical Society and SPSS(UK) Ltd. In addition to financial sponsorship, however, it has the support of many other individuals and institutions concerned with statistical education.

The RSS Centre's brief is to promote the improvement of statistical education and thinking at all levels, i.e.within education (primary to tertiary), within employment (including the continuing professional development of statisticians, and all who use statistics as part of their professional lives or who work with statisticians), and within society at large. The Centre will be a focus for national and international collaboration, and will actively engage in statistical education research as well as stimulating and providing support for initiatives elsewhere. The RSS Centre will also run conferences and courses, contribute to appropriate national and international publications, and participate in the general debate about statistical education issues.

The Centre has just bid successfully for Department for Education and Employment funding and a two-year project, entitled 'Matching Statistical Training and Assessment with Employment Needs', will commence in April 1996. Anne Hawkins will direct the project, which is part of the DfEE's Higher Education Discipline Network initiative, in collaboration with a core project team comprising Peter Holmes and Gillian Constable (University of Sheffield), Neville Davies (Nottingham Trent University), and Margaret Rangecroft (Sheffield Hallam University). A network of trainers, employers and employees will be established, committed to improving statistical training and assessment, and to making them more appropriate. Several groups and organisations have already expressed a wish to be involved, and the project team is actively seeking to identify others to do likewise. The ultimate objective will be to find ways of enhancing the employability of graduates and making them more useful to employers.

The RSS Centre starts from a position of strength. Anne Hawkins, its Director, is also President of the International Association for Statistical Education (IASE), and Advisor to the World Numeracy Programme. She will see to it that the Centre establishes its own distinctive character and balance between local, national and international involvement. However, it can also build upon the excellent reputation enjoyed by the University of Sheffield Centre for Statistical Education until its closure in 1995, after nearly 20 years of operation. With 5 years' guaranteed funding, the RSS Centre will have time to undertake work of considerable significance, and it starts with many national and international collaborations already in existence. Its Resources Collection and Library (including teaching texts and aids, audio-visual materials and computer software, and literature on research into statistical education) will provide a valuable facility for teachers in the locality, and for visitors from further afield who come to study and research at the Centre.

TEACHER PREPARATION IN STATISTICS AT THE SECONDARY SCHOOL LEVEL: NEED, INNOVATION AND CHALLENGES

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[**Note:** *This discussion is presented in two parts. The previous issue contained the objectives and description of the program. This issue contains the dissemination, evaluation and conclusions.*]

Dissemination of the Program

Dissemination of the project was done through workshops and Statistics Fairs. Teachers gave two workshops to their co-teachers in the district, dealing with the four booklets of QL Series. The teachers earlier had the benefit of four workshops given by a lead teacher sent by the Center for Statistical Education of the ASA. Teachers were oriented on giving workshops using QL workshop material. The project director was present at all workshops and conversed about the importance of relating statistics and data analysis to real life situations.

Statistics Fairs made statistics very popular in schools. All the teachers introduced statistical concepts via experiments with small projects. Students also did a bigger project for science fair competitions. The teachers had Statistical Fairs in their own school and invited the students from other classes and other schools in the town to see the exhibition. In addition, the teachers together held a Statistics Fair at the university campus, where a maximum of two projects per teacher were displayed for competition. Students chose for their projects topics from varied subjects dealing with

social issues, health, medicine, politics, environment, economics, education and science. Another notable development was the level of computer usage in the projects. Even though not all Island schools are highly computerized, most of the class students presenting projects made an effort to obtain access to IBM or Apple Computers. Many projects included computerized graphics and statistical summaries of data. Thus the NSF goal of infusing "technology into the teaching, learning and doing of mathematics and science," channeled through similar ASA and NCTM approaches has been met to an unexpected degree. The statistics fairs were open to the public, and were attended by students, teachers, friends, and judges.

The second phase of the program was to orient administrators to the training given to lead teachers and to convince them of the importance of the place of statistics in the mathematics curriculum and the importance of an experiential approach to the learning of statistics.

The classroom portion of the second phase was therefore far shorter than that of the first, an intensive nine-day seminar. First, the group was introduced to the QL philosophy and to the ASA/CES guidelines for teaching statistics in elementary and secondary education. They were given sample lessons from the QL series; all participants themselves did projects; most used data of personal or official interest, usually from the Education Department. They wrote a short research report, analyzing their data on computers. Administrator reaction was very enthusiastic. Some stated that knowledge of statistical techniques and report writing would be of great use to them in their own work environment; they were thus convinced of the relevance of statistical knowledge in the information age. More importantly, they were able to see the competitive edge it could give their own students.

Evaluation of the program

Evaluation of the program was done through questionnaires and personal interviews with the participant teachers and liaison officers, results of examinations given to teachers, and the quality of teacher projects and student projects. Almost all the teachers expressed that the material covered in the program was valuable and that the knowledge of data analysis and probability was of great value. In general, the usefulness of the material given and the effectiveness of the program was very positive for the teachers.

Performance of teachers in the examinations revealed that teachers need to be prepared much longer in classical statistics. Most of the teachers felt that more time should be dedicated to traditional problem solving methods in class and less time should be spent on workshops and conferences.

It does take real effort to make mathematics teachers see statistics as a part of applied mathematics and different from pure mathematics. Nonetheless, many teachers said that they are now applying the real-life-oriented methods of teaching to their other mathematics courses also. Several teachers said that many students preferred statistics classes over mathematics classes. Group projects provided the opportunity for cooperative learning and hands-on experience. As seen by the quality of the research projects, the program objective of creating interest in statistics was achieved beyond any doubt.

Conclusions

The notable feature of this project was the comprehensive nature of statistical education to school teachers. It not only included the approach of the QL project of ASA but also added many additional aspects such as conferences and workshops by researchers and experts in pedagogy. It prepared the teachers for an extensive period of time and also had a follow up period with class visits to monitor the implementation of the teaching methods. The workshops given by participant teachers to their colleagues disseminated the project well. In a centralized educational system such as in Puerto Rico, the project succeeded in involving not only teachers but administrators in the area, thus providing teams of statistical educators in the entire region of Mayaguez.

MEETINGS

Information about the following four meetings of interest to IASE members can be found in the "Calendar of Events" portion of this Newsletter.

Statistical Education Workshop, (July 5-7, 1996)

3rd Australian Statistical Conference, (July 8-12, 1996)

Statistical Education Sessions at ICME 8 (July 14-21, 1996)

IASE Round-table Research into the Role of Technology in Teaching and Learning Statistics, (July 23-26, 1996) .

BERNOULLI SOCIETY FOR MATHEMATICAL STATISTICS AND PROBABILITY

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President BS: Jef Teugels

The Bernoulli Society.

The Bernoulli Society's mission is to further, through international contacts, the increase of natural knowledge and the welfare of mankind through the advancement of the sciences of probability (including stochastic processes) and mathematical statistics, and their applications. Consequently the Bernoulli Society (BS) organises and supports every year a large number of international conferences; both on its own, as part of the ISI, and together with sister organisations such as IMS (Institute of Mathematical Statistics); it publishes scientific journals including the society journal *BERNOULLI* (editor Ole E. Barndorff- Nielsen, Aarhus) and the newsletter *Bernoulli News* (editor Claudia Klüppelberg, Mainz); and it is involved in numerous other activities supporting the same goals. It has a membership of around 1600, half being ISI members who chose BS as their section. The society also makes use of more modern means of communication; in particular through the World Wide Web (homepage: http://www.math.ruu.nl/bernoulli).

The society holds a World Congress every four years. The 4th World Congress will be held in Vienna, August 1996; and the 5th in Guanajuato, Mexico in the millenium year 2000. More detailed information on these and many other meetings will be given below (and can also be found through our world wide web site).

The daily running of the society is in the hands of an executive committee consisting at the beginning of 1996 of:

President: Prof. Jef L. Teugels (Leuven, Belgium; jef@pearson.cc.kuleuven.ac.be)

President-elect: Prof. Louis H.Y. Chen (Singapore; matchyl@leonis.nus.sg)

Treasurer: Prof. Morris L. Eaton (Minnesota, USA; eaton@stat.umn.edu)

Scientific secretary: Prof. Richard D. Gill (Utrecht, Netherlands; gill@math.ruu.nl)

Membership secretary: Prof. Volker Mammitzsch (Marburg, Germany; mammit@mathematik.uni-marburg.de)

Policy of the society is discussed and decided in a twelve member council, presently consisting of: Peter Hall (Canberra), Wilfrid Kendall (Warwick), Marcel Neuts (Arizona), Alexander Novikov (Moscow), Boris Penkov (Sophia), Dag Tjostheim (Bergen), S.I. Amari (Tokyo), David Nualart