

# INTERNATIONAL ASSOCIATION FOR STATISTICAL EDUCATION

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## EDITORIAL

With the transfer of statistical education activities from the ISI Education Committee to the newly established International Association for Statistical Education (IASE), this section of the Newsletter no longer appears under the old title, ISEN. In all other respects, however, it remains unchanged and will continue to cover news about forthcoming meetings, reports from around the world, as well as occasional longer articles on special topics. With the newsletter reaching a wider audience through membership in the new Association, it also has a larger source of material to draw upon. Readers are invited - indeed, urged - to send in news and stories about their own activities in statistical education. Two such reports appear in this issue - one from Italy and one from the USA - and we recently carried a story about a committee for statistical education in Sweden. Among reports planned for forthcoming issues is one on teaching Medical Statistics in a developing country and another on a series of Statistics courses for managers, scientists and technicians in industry.

## NEWS AND ANNOUNCEMENTS

### Transitional Committee for the IASE

Following is the list of members of the transitional committee of the IASE, the group that will steer the new Association until elected officers assume their duties at the first General Assembly:-

David Vere-Jones, President and Finance Vice-President  
Kerstin Vännman, Scientific Programme Vice-President  
Anne Hawkins, Publications Vice-President  
Kenneth Bryson, Membership Vice-President  
Marie-Jeanne Laurent-Duhamel, UNESCO Correspondent  
Mary Regier, Newsletter Editor  
James Ntozi  
Richard Scheaffer

### Enrolment of Founding Members of the IASE

As 1991 came to an end, the ISI's newest Section - the IASE - began its drive for Founding Members. An initial mailing list has been compiled from several sources: ICOTS 3, ICME Roundtable, Education Committee and ICMI National Correspondents, and the IASE Open Meeting at the 48th ISI Session. Also, many individuals have written to express their interest in joining the Association. As of 18 December 1991, we had 880 names and addresses from 93 countries.

At the Winter Conference of the American Statistical Association, Ken Bryson, the IASE Vice-President for Membership, will be present to encourage others to join. Since the Conference is devoted to statistical education we are hopeful that many will be added to the IASE mailing list there.

An advertisement for IASE will appear in the next issue of "Teaching Statistics". The publicity campaign will also include other journals and newsletters.

The ISI Executive Committee has not yet established dues for IASE. That decision is expected soon. Then Daniel Berze, Assistant Director for Administration in the ISI Permanent Office, will be mailing out the new IASE membership application brochures. To be sure that you receive a membership application, please write to Daniel Berze who will make sure you are on the IASE mailing list.

### ISI Round-Table Conference (10-14 August, 1992)

A round-table conference on teaching statistics sponsored by the ISI will be held in Quebec from 10 to 14 August. The meeting, which will focus on primary through high school levels, is entitled: "Introducing Data Analysis in the Schools: Who Should Teach it and How?"

The conference proposes to explore issues such as: the goals of data analysis, unique teaching strategies, future research directions, and the role of mathematicians versus statisticians. Copies of all the papers will be circulated to all participants prior to the conference, and it is expected that participants will be totally involved in all the sessions. A typical session will involve two or three papers, with significant time for discussion.

It is hoped that the proceedings from this conference will provide a useful resource for professionals working in this area of statistical education.

The number of participants will be limited to approximately twenty. While some invitations have already been sent, anyone who might be interested in submitting a paper for consideration should contact: Dr. L. Pereira-Mendoza, Faculty of Education Memorial University, St. John's, Newfoundland Canada A1B 3XB, Telephone: 709 368 6764 (Home) 709 737 7649 (Office) 709 727 2345 (FAX) Electronic mail: LMENDOZA@KEAN.UCS.MUN.CA

## REPORTS FROM AROUND THE WORLD

### Activities of the Italian Statistical Society in Education

One of the activities of the Italian Statistical Society is sponsoring the publication of the review "Induzioni, demografia probabilità statistica a scuola" (inductions, demography probability statistics in schools); it acts in conjunction with "Teaching Statistics". It is a six-monthly review with about 250 pages a year.

The review aims to build a communications tool for spreading statistical ideas at pre-university levels, which in Italy provides for including the teaching of elements of probability and statistics, at least in the official syllabus, if not in practice. These subjects are mainly concentrated in the mathematics programmes, although they do appear in other disciplines as well, starting from primary school up to the first two years of high school (ages 14-15 years). Articles related to the first year of university are also included, but to a lesser degree. The editing board (including professors M. Barra, A.M. Birindelli, F. Corradi, E. Lombardo, M. Pannone, C. Rossi) is located at Dipartimento di Studi Geoeconomici, Via del Castro Laurenziano, 9 00161 Roma.

Other activities include an exhibition which the Italian Statistical Society organized for students and teachers entitled "Four Routes in Statistical Research".

The first route was devoted to a historical study of the year 1885, which reported health statistics for the Italian population after the establishment of the Italian Kingdom in 1861.

The second route, using videotapes and interactive programmes, dealt with the problem of using statistical techniques to optimize biological tools in improving agricultural systems.

The third route dealt with building and analyzing econometric models to support decision-making; posters and interactive programmes allowed visitors to understand the use of forecasting models in the economic framework.

The fourth route dealt with the epidemiology of AIDS. Posters and short seminars allowed visitors to understand the present situation regarding the spread of the epidemic around the world in different risk groups. Forecasting models were also used to show how to perform risk-benefit analysis to optimize public health strategies.

Several classes of students from high schools and universities in the area visited the exhibition, as well as groups of teachers who could also obtain materials to be used in their teaching.

On another front, the Italian Statistical Society (SIS) supported the establishment of a university centre for statistical education (CIRDIS; Centro Interuniversitario di Ricerca per la Didattica della Discipline Statistiche) with the aims of promoting an coordinating research in teaching statistics, coordinating research in teaching different levels, publishing materials to be used for statistical education, etc.

The activities of the Centre are coordinated by a scientific committee which includes Professors: G. Cicchitelli, R. Guseo, E. Lombardo, M.A. Pannone, M.G. Ottaviani and S. Rigatti Luchini. Presently, the Centre is involved in a research project concerning textbooks for high schools and in the organization of a course for teachers entitled: "Impiego dell'elaboratore elettronico nella didattica della statistica (using computers in teaching statistics)".

Other activities of the SIS include its participation in conducting a mathematical refresher course in probability and statistics for high school professors, set up by the CUD (Consorzio Università a Distanza).

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#### **The Centre for Statistical Education of the American Statistical Association (ASA)**

The Centre for Statistical Education was a vision of the ASA and the National Council of Teachers of Mathematics (ASA/NCTM) Committee on the curriculum in statistics and probability. The ASA Board of Directors made that vision a reality in 1985 with the birth of the Center for Statistical Education.

Virtually every report on the status of mathematics education in the United States urges the inclusion of statistical and probabilistic skills and concepts for all students, from Kindergarten to grade 12 (K-12). The result is that amidst the profound changes taking place in the K-12 mathematics curriculum there is now an increased emphasis on statistics and probability as strands throughout the curriculum, for all students. Instrumental in fostering this goal is the ASA through its Center for Statistical Education and the ASA/NCTM Joint Committee.

#### **CSE's Mission: Statistics and Probability as an Integral Part of Education**

Over the past 25 years, ASA with the support of NCTM and funding from the National Science Foundation, has helped provide the basis for the statistics strand developed for the NCTM Curriculum and Evaluation Standards. Using the Quantitative Literacy (QL) Projects as a foundation, the Standards have carefully delineated strands in

statistics and probability throughout the math curriculum and emphasis upon modelling from data in other areas. To significantly raise the quantitative literacy of this and future generations, CSE provides outreach -- keeping abreast on how statistical and mathematical education is being restructured, on the need for curriculum materials (in the area of statistics and probability) and planning for the development of the new material based on the assessment of needs. Four areas most recently identified include:

- QL III Project. In January 1991 the ASA proposal "A Data-Driven Curriculum Strand for High School Mathematics," became a three-year grant funded by NSF. It is teacher oriented, with planned outcomes in scope and sequence, modules, identified materials, and teacher workshops -- for a data analysis strand incorporating real world applications of data analysis into the traditional curriculum of algebra, geometry, trigonometry, and functions materials and methods.

- QL IV Project. This project provides a means for introducing data analysis skills at the elementary level. Funded as a three-year project in May 1991, the ASA proposal, "Quantitative Literacy in the Elementary Curriculum," will produce a workshop package that any school or district can use as a staff development vehicle to implement effectively and accurately a QL strand into its curriculum.

- QL Project V. In a 1989 report, the National Commission on Statistical Studies stressed that numeracy is important for a nation expecting to compete in a global economy fuelled by information technology. Society can no longer depend solely on the mathematics teacher to prepare our children to think quantitatively, but QL, enhanced by the usage of technology, is virgin territory for the social science/studies teacher and the school-based administrator whose involvement is pivotal. Sharing this view, the ASA has proposed the infusion of technology in the social science secondary school curriculum: base-level quantitative literacy enhanced by the usage of technology -- statistics, probability, graphics, data analysis, and other related topics. The proposal has been submitted to NSF and is now under review.

#### **ASA/CSE Quantitative Literacy Workshops**

One tangible contribution has been the highly successful ASA/QL Workshops which were developed and initiated with the generous support of two National Science Foundation grants. The workshops are designed to promote professional development among secondary school teachers of mathematics while preparing them for the instruction of data analysis in the classroom. Exploring data, probability, simulation, and an introduction to inference through sampling and surveys are the topics explored. Techniques for teaching the topics are modeled by the QL team. Time is provided to discuss the integration of the materials into the mathematics curriculum. The participants work on projects and are given opportunities to explore computer software and the use of calculators. Each workshop is conducted by at least one statistician and two classroom teachers, and a follow up session during the school year allows for reinforcement and individual support.

#### **Summary**

The CSE, with the help of ASA's 78 Chapters and 15 Sections, is now a dynamic entity that provides among its activities: ASA/QL Workshops for teachers; three national K-12 student competitions; speakers for national, state and local meetings and also for the classroom; and regional support for groups of practising teachers, school administrators, and statisticians. CSE provides training and support systems for the implementation of a creative introduction to modern statistics and probability for the mathematics classroom -- for the teacher, the student, and their school-based administrator, with expansion into other quantitative disciplines planned.