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This column begins with a summary of the IASE invited paper meetings for the 52nd ISI Session in Helsinki, and is followed by three reports from the ISI Conference held in Istanbul during August, 1997, prepared by the outgoing President (Anne Hawkins), incoming President (Maria Gabriella Ottaviani), and President-elect (Brian Phillips) of IASE. The third section presents information on two recent conferences of interest to statistics educators (PME and MERGA). The fourth section describes recent publications of interest, and the final section lists some announcements.



IASE Executive in Istanbul

## IASE Invited Paper Meetings for ISI 52nd Session, Helsinki, 1999

Statistical education and significance tests controversy.

2. Teaching and training multivariate data-analysis.
3. Statistical education using flexible learning approaches.
4. Statistical education for life.
5. Issues involved in the assessments and evaluation of student learning of statistics.
6. Visualisation as an educational tool.
7. Statistical training of people working in and with official statistics (joint with IAOS).

## 2. Reports from ISI 1997

### Report from Anne Hawkins

1995-97 has been a period of growth and consolidation for the International Association for Statistical Education. The membership has continued to rise, and now stands at over 350. There has also been a decrease in the number of members failing to renew their subscriptions in successive years.

There have been a number of initiatives aimed at recruiting additional, particularly institutional, members. A direct appeal was made to the network of National Correspondents to assist with recruitment and, in some areas, the correspondents have become much more actively involved in disseminating information about IASE's activities.

In addition to its contribution to the *ISI Newsletter* and *IASE Matters* (the centrefold that is a regular feature of *Teaching Statistics*), IASE now produces *IASE Review*, an annual publication specifically aimed at the IASE membership but also serving a useful purpose as promotional literature.

IASE has a growing collection of books on statistical education that carry its logo. Recent additions include; *Papers on Statistical Education* presented at ICME-8, edited by Brian Phillips, *The Assessment Challenge in Statistics Education*, edited by Iddo Gal and Joan Garfield, and the proceedings of the 1996 IASE roundtable conference, *Research into the Role of Technology in Teaching Statistics*.

1996 was a particularly successful year for IASE in terms of international meetings. In June of that year it co-sponsored (with IASC) the International Conference on Computational Statistics and Statistical Education hosted by the University of Tartu in Estonia. The full proceedings of this conference are expected to be published soon, but a selection of the presentations has already been translated and distributed freely to Estonian school teachers.

In July, 1996, there was a strong contingent of statistical educators who attended the IASE Topic and Working group sessions at ICME-8 (the 8th International Conference on Mathematical Education). This was followed by an extremely successful IASE roundtable conference, *Research into the Role of Technology in Teaching Statistics*, hosted by the Statistical Education Research Group at the University of Granada in Spain.

This week, of course, has seen an increased number of sessions on statistical education here at ISI-51. IASE has been directly involved in organising seven sessions, including some that are joint with other ISI sections. Plans are already well underway for ISI-52. Eight sessions have been proposed, and the session organisers are already engaged in finding appropriate speakers.

Other plans for the future are also progressing well. ICOTS-5 (the 5th International Conference on Teaching Statistics) will be held in Singapore in June 1998. Most of the programme is now in place and

formal invitations have been sent out to all the plenary and invited speakers. The Local Organising Committee has secured sponsorship to assist Singaporean teachers. Assistance for other delegates has been actively sought by the Executive and some limited funds have been set aside for this purpose. The South African Statistical Association has expressed a wish to host ICOTS-6 in 2002.

Financially, IASE is beginning to strengthen its position. In order to do this, it has relied heavily on the efforts of other institutions and individuals to fund its activities. Some limited recourse has been made to the Special Education Programme funds to provide seed money for ICOTS-5 (to be returned) and part-funding for last year's roundtable conference. Colleagues at the University of Granada were, however, particularly active in raising local funding to subsidise this meeting, thereby greatly assisting the IASE finances. Recruitment and other promotional drives and mailshots have also been mainly carried out without recourse to the IASE budget. It is not clear that such practices will continue to be viable in the future.

The need to generate more income in order to support even the most modest commitments is uppermost in the Executive Committee's mind. It expects to increase IASE's membership through concessionary subscription offers tied to ICOTS-5 registration. The offer of a free book (*The Assessment Challenge in Statistics Education*) for new subscribers to IASE is also attracting more members. The current Executive has been considering the possibility of seeking funding for specific IASE projects, maybe in areas associated with the ISI World Numeracy Programme to which IASE has an input through representation on its Advisory Board. The incoming Executive is also interested in this as an option.

### Address by Maria Gabriella Ottaviani

First of all, let me thank IASE President, Anne Hawkins, for helping me to become acquainted with the life of the IASE and its needs. As you well know IASE is a very young Association, only 6 years old. But we must not forget that it is continuing the activity of what was a glorious Committee: the Committee of Statistical Education that from 1945 to 1991 carried out the ISI program, developing and promoting statistical education all over the world.

Today this project is our task. To cope with this enormous energy, enthusiasm and ideas are needed. Energy is needed to foster and encourage the scientific growth of the IASE and to help circulate

abroad the efforts of our members in their own countries. Enthusiasm is needed so as not to be discouraged by difficulties due to the lack of recognition of our particular field of research by our colleagues who have not yet fully understood that the lack of visibility is of enormous damage for statistics, and that statistics education is a possible way, and not the least important, of gaining the recognition of the usefulness of statistics in society. Ideas are needed to face a changing world, with technological tools changing quickly and consequently the changing needs of our students.

All you who are here are probably aware that 6 to 7 persons, the so called Exec., are not enough for such a huge task, however energetic, enthusiastic, and imaginative they are. We 6 are not a magic Exec, as I heard one of my colleagues say. IASE also needs your efforts to grow. All of you, every member, can act as an ambassador for the Association. Each of you can give his/her contribution to extend the network between the researchers in our area all over the world- this has been my task in the last two years.

If in your country there is a Society of Statistics, you can get in touch with it, ask if the society has a group devoted to statistics education, try to take part in it if the group already exists, or suggest to create one. Please inform the IASE Exec of the activities which take place in your country regarding statistics education. We have at our disposal the *ISI Newsletter* and the *IASE Review* to inform each other of any interesting initiatives! Maybe there are books, local conferences, work shops it is important to inform the other researchers of. Each of you may in some way serve as a connection between the IASE and your country, and vice-versa.

We need to recognise some peculiar difficulties of our section compared with other ISI sections. Each of us works in their own country, in their own language, and prepares educational materials that are easy to understand in their country. Therefore, it is not always easy to communicate with each other. This is one more challenge for IASE, we should neither forget it, nor underestimate it.

#### *Some comments from the IASE General Assembly*

As Vice president in charge of meetings, Brian Phillips outlined the main activities which are taking place. Firstly, he briefly reported on the very successful meetings held last year in Spain, the Statistical Education papers given at ICME-8 and the IASE Round Table meeting in Granada. The proceedings of both meetings are now available.

He then outlined the preparations for ICOTS-5. The Second Announcement is now available as most members now know. Brian thanked all those who are helping with the organisation either as topic conveners, session organisers or in other roles. He pointed out that the registration fee was reasonable since it includes transportation from the hotels, refreshments, lunches and the conference dinner. Also as the prices are given in Singapore dollars,

participants need convert them to their local currency. Some people have expressed concern about the cost of accommodation as listed in the ICOTS-5 Second Announcement. Those with any queries such as possible hotel or tour alternatives should contact the ICOTS-5 Secretariat or they could look at package deals with their own airline.

Planning for future conferences is proceeding. These include ICOTS-6 to be held in 2002, possibly in South Africa, the Statistical Education sessions for ICME-9 to be held in Japan in 2000 along with the Round Table on Statistical Education, which will probably also be held in Japan. We decided on the Theme for the round table "Training Researchers in the use of Statistics", an area of growing importance which has not been specifically addressed by an IASE meeting to date. For the 1999 ISI meeting to be held in Helsinki we also are planning six sessions plus one joint session. Brian pointed out that the small executive cannot carry out all these tasks without help from the members and welcomes any offers of assistance. Finally Brian thanked the outgoing Executive members, especially Anne Hawkins and Dick Scheaffer, for all their help and support over the past few years.

### **3. 1997 Conferences on Statistics Education**

*Summaries prepared by John Truran (E-mail: jtruran@arts.adelaide.edu.au)*

The Psychology of Mathematics Education (PME) Stochastics Teaching and Learning Working Group This group met three times during the PME International Meeting held in Lahti, Finland in July, 1997.

In the first working group session, resources and recent publications were shared. General information was given about the ISI, the IASE, the latest Newsletter of the International Study group for Teaching and Learning Statistics and the 1998 ICOTS Conference in Singapore. Anne Hawkins reflected on her earlier writings on research in statistics education in the light of today's situations. She felt that the current issues which needed emphasis were:

- (1) more detailed understanding of conceptions and misconceptions;
- (2) use and interpretation of tables;
- (3) use of technology; model construction; and
- (4) refining assessment methods.

The other two working group meetings were devoted to planning a collaborative book on research in stochastics education. In 1999 PME will be held in Israel in mid-July. In 2000, it will be held in Hiroshima from 30 Jul to 6 Aug., ending just two days before ICME starts in Tokyo.

Stochastics Presentations at the Mathematics Education Research Group of Australasia (MERGA),

This conference was held in New Zealand during July 1997. There is a strong statistics group in Australia and New Zealand, and we had a

particularly good meeting this year, so a summary provided here. An expanded version will be published later in *Teaching Statistics*.

Mike Shaughnessy came from the USA to give one of the keynote addresses, entitled "Missed Opportunities in Research on the Teaching and Learning of Data and Chance". He argued that we should work more from what children could do, than from what they could not do. He also argued strongly that there was inadequate research into students' understanding of variability.

This theme was taken up by Maxine Pfannkuch who has been conducting interviews with practising statisticians to assess how they reason in their work. She also emphasised the importance of understanding variability and thought that it had been neglected in classrooms because of the pure approach usually found there. She argued that the interplay between model and reality plays a great part in the work of real statisticians, and should be more emphasised in classrooms.

Two reports were concerned with work with school children. Jenni Way summarised the results of asking 48 primary school children to compare proportions in two urns. Jenni is seeking, among other things, to codify the many different categories proposed by a number of other research workers over the last 15 years. If she is successful this will have a number of important consequences for teacher knowledge. Jonathan Moritz and Jane Watson have been looking at the ability of students from Year 6 to Year 11 to interpret a potentially misleading newspaper advertisement. Many students failed to interpret and use the advertisement accurately. These results will contribute to a larger study designed to assess how people respond to visual data.

In tertiary statistics Sue Gordon found that for some students surface learning approaches did tend to produce good marks. Some deep learners obtained poor scores because they disregarded the learning of details which are required in examinations. Anne Williams found that students have trouble with significance tests because they lack adequate statistical language, have implicit procedural knowledge and are more concerned to make a statistical conclusion than to think deeply about the situation. Pam Shaw found that even non-naive students showed a significantly greater tendency to recognise skewness when distributions are left-skewed rather than right-skewed. John Truran showed how a critical textual analysis of responses to examination questions could provide ways of evaluating questions and refining them in the future. In another paper, he used examples from the introduction of probability into Australian schools to support his argument that curriculum forces within education systems may be constructively interpreted as conforming with the same ecological principles which are to be found in modern zoological thinking.

In teacher education, both Ron Smith and Kath Truran reported on difficulties teachers have with teaching stochastics. Kath found that student teachers' lessons tended not to be integrated into an underlying body of knowledge. In particular, they were unable to design a constructive set of questions designed to help children think through the key ideas. Ron argued that teachers needed a different kind of in-service support for stochastics than for other mathematics topics because of their lack of basic knowledge. He also presented hard data that some teachers really do view probability as a wet Friday afternoon activity.

#### 4. Forthcoming Publications

*Research on the Role of Technology in Teaching and Learning Statistics*. Proceedings of the 1996 IASE Round Table Conference. Edited by J. Garfield and G. Burrill. Available from the ISI for \$25.00 (US) which includes postage.

This soft-cover volume contains 21 papers and five summaries of discussions, grouped into the following categories: (1) How technology is changing the teaching of statistics at the secondary level, (2) Developing exemplary software, (3) What we are learning from empirical research, (4) How technology is changing the teaching of statistics at

the college level, and (5) Questions to be addressed on the role of technology in statistics education.

*Computational Statistics and Statistical Education: Proceedings of the Tartu Conference* (Tartu, Estonia, 1996). E. M. Tiit (Ed.) Contents: Statistical software as an environment of teaching statistics, Statistical education - Where are we going?, Some computational problems in multivariate applied statistics.

\$10 US, \$17.50 DEM. For information, contact E. Tiit at E-mail: etiiit@ut.ee, Tel: +37 27 46588, or Fax: +37 27 433509.

*Stochastics Education Research Papers from 1997*. This is a collection of research papers on stochastics education which were presented at different conferences during 1997 (e.g., PME, MERGA, AERA). This collection will be available for approximately \$25 (US) in December. Please contact Joan Garfield for further information.

#### 5. Announcements:

**ICOTS 5** will be held in Singapore June 21-26, 1998. For further information please refer to the ISI Newsletter Vol. 21, no. 1 (p. 18) and no. 2 (p. 18). Abstracts for papers are due October 31, 1997, final papers must be submitted by February 15, 1998.

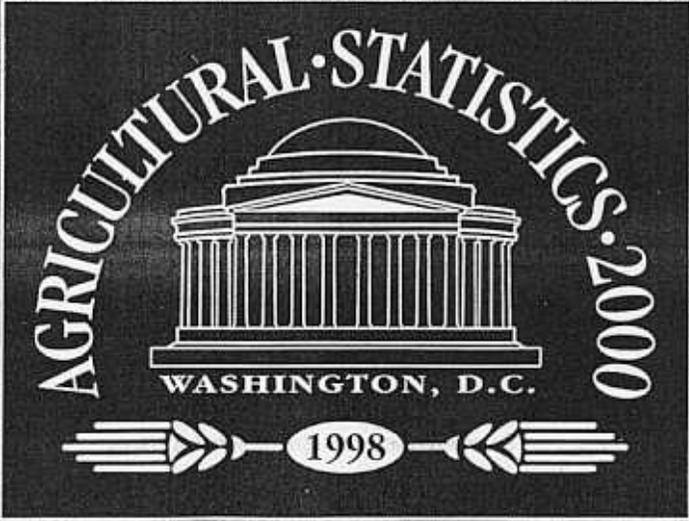
The deadline for applications for accommodations is May 20, 1998. Complete information is available at the WWW site:

<http://www.mrc-apu.cam.ac.uk/mhonarc/conferences/msg00007.html>

**IASE Round Table**. Contacts have been kept with the Statistical Education Committee of the Japan Statistical Society to hold the next IASE Round Table in Japan in 2000, in connection with IMCE-9. The theme of the round table will be: "Training researchers in the use of statistics".

**GRETAF-CI** (Groupe d'Etude sur l'Education en Afrique, Section Côte d'Ivoire) is an NGO which has joined the International Association GRETAF based in Paris, France. The members are statisticians, demographers, educators, from the Ministries of Education and Formation. Their interest is the knowledge of education processes and important indicators. This Association is a new member of IASE. All people who are interested in research on education in Africa may become members (200FF per year). Contact Dr. Alice Kouadio, Coordonnateur National du GRETAF-CI, 06 BP 1265 Abidjan 06, Ivory Coast. Tel: 225 21 99 06, E-mail: akouadio@africaonline.co.ci.

Joan Garfield



**AGRICULTURAL STATISTICS 2000**  
WASHINGTON, D.C.  
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*An International Conference  
On Agricultural Statistics*

March 18-20, 1998  
Holiday Inn Rosslyn Westpark  
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