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### **Report from the IASE President 2000, Brian Phillips**

The work of the ICOTS-6 IPC is going very well and has reached a stage where most of the session organizers have been appointed and a general call for papers has gone out. I am especially pleased with the most positive response from so many people and we now have over 70 sessions in place. Full details are available on the ICOTS-6 IPC web site <http://www.beeri.org.il/icots6/>. I wish to thank all those involved in getting the program off to such a good start. Furthermore, the local organizers under the guidance of Delia North as Chair, and Linda Haines, President South Africa Statistical Association, are also doing a terrific job with the local planning as is seen in their website <http://icots.itikzn.co.za/>. It is now up to all those involved with statistical education to show expressions of interest by responding to the call, which can be found on the IPC web site given above, so that the speakers can be put into place for a really special conference.

The Statistical Society of Australia's Statistical Education workshop in July in Adelaide was a great success with over 40 people from across Australia and New Zealand, plus Canada and the USA, attending a wonderful program. The standard of all the presentations were very high, superbly led by David Moore who gave the plenary address. Such meetings help demonstrate the widespread interest in statistical education at all levels and the quality of people involved.

In August, ICME-9 was held at the convention centre in Makuhari, near Tokyo, Japan and was attended by over 2000 people from about 50 countries. Having mathematics and statistics educators in the same meeting provides a great opportunity to investigate the similarities and differences between the methodologies used in the two disciplines. One thing that became clearer was that both mathematics and statistics educators are increasingly facing many of the same challenges, especially how technology should be best used in the classroom. The fact that it was reported that the Japanese have cut their hours of mathematics in schools by up to 30% is very disturbing, but may indicate that we all have to be even more diligent about keeping our courses up to date using the best methods available. The main IASE involvement was to organise a topic group on *The Teaching and Learning of Statistics*. I would like to thank Susan Starkings, the Topic Chair, and the excellent group of speakers from across the globe who presented most interesting and varied papers in two sessions. Further in this issue a more detailed report is given.

The other important IASE activity over this period was the IASE Round Table Conference *on Training Researchers in the Use of Statistics*. Over 40 people from 16 countries discussed in considerable depth this increasingly important issue. A very special thanks goes to Carmen Batanero for organising such an excellent event and to the Japanese hosts, in particular Professor Yuki Miura and Dr Ryoichi Shimizu. See below for a more detailed report.

We are now concentrating on preparing for future IASE events over the next two years. These include the *Second International Research Forum on Statistical Reasoning, Thinking and Literacy* SRTL-2 University of New England, Armidale, Australia, August 15 - 20, 2001, the IASE Satellite meeting *Statistical Literacy* Seoul, August 21-22, 2001, and the *Statistical Education Sessions* at the 53rd Session of the International Statistical Institute in Seoul, August 22-29, 2001 and ICOTS-6. See the web page <http://www.swin.edu.au/math/iase/conferences2.html> for details.

### *International Association for Statistical Education*

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IASE web page: <http://www.cbs.nl/isi/iase.html>

## CONFERENCE REPORTS

### **PME 24 STL DG Stochastics Teaching and Learning Discussion Group 6, Japan, July 23-27, 2000**

*John Truran, truranjk@camtech.net.au*

At the 24<sup>th</sup> Psychology of Mathematics Education Meeting in Hiroshima in July, 2000, (<http://home.hiroshima-u.ac.jp/pme24/index.html>) the Stochastics Teaching and Learning Study Group held two meetings, which focused on the relationship between stochastic and mathematical thinking, learning and teaching. Three short papers were presented. Mario Barra (Italy) spoke on "The Relationship between Probability and Geometry: A Didactic Use" and presented some fascinating and quite unexpected geometrical models for common probabilistic situations. Jenni Way and Paul Ayres (UK/Australia) discussed "The Relationship between Pattern and Randomness" and suggested that the current school emphasis on pattern in mathematics may be inhibiting children's understanding of the concept of randomness. Finally, James Nicholson (Northern Ireland) looked at "Perspectives from Students and Teachers on the Differences in Thinking in Mathematics and Statistics" (Co-author Gerry Mulhern). He emphasised the difficulties of blending traditional mathematics with its deterministic "right answers" and statistics with its need for creative, non-unique interpretations. While none of these papers was in any sense trivial, all were presented informally and very enthusiastically to a fairly small group in circumstances where time was not at a premium. So the ensuing discussions were richer than is often the case with the formal, refereed presentation of research results. Our Japanese hosts had provided us with plenty of time to "confer", which was much appreciated. A similar format is planned for the next PME meeting in Utrecht (<http://www.fi.uu.nl/pme25/>), The Netherlands, in July 12-17, 2001. Anyone wishing to make a contribution to this meeting is asked to contact Kath Truran at [Kath.Truran@unisa.edu.au](mailto:Kath.Truran@unisa.edu.au) For more information on the PME STL DG visit

<http://www.beeri.org.il/stochastics/>

### **IASE Teaching and Learning Statistics topic group at ICME 9, Japan, July 31-August 6,2000**

*Susan Starkings, Chief Organiser TSG 4 ICME 9*

On behalf of the International Association for Statistical Education (IASE) topic group 4 (TSG4) entitled 'Teaching and Learning Statistics' sessions were held at the above conference. The aim of this topic group was to elucidate problems, with potential solutions,

involved in the teaching and learning of statistics at all levels of education.

The format of the sessions allowed speakers to put forward their own countries, and in some cases joint countries, research findings. Many issues were brought to light with possible methods of teaching proposed. At the end of each talk delegates had the opportunity to ask speakers questions on their presentations. These questions were not only interesting and the replies informative but showed that the delegates at ICME9 have a real concern over the way students learn statistics. Two sessions did not appear to be enough time for all the issues raised to be fully explored, however, many delegates carried on discussions well after the sessions had ended. The speakers presented issues on a variety of topics and gave their views from many different cultures. The findings from the research carried out was diverse, from many levels of education and in total added to the flavour of the sessions content and debate.

Common questions raised at the sessions focused on the following areas: (1) how much mathematics is needed to be able to do statistics? (2) Developing and transitional countries need help to move into the realm of statistical education being advocated by developed countries, (3) the use of appropriate technology could enhance the students understanding of statistics, (4) co-operation between educational institutions, the development and exchange of ideas is paramount to the successful implementation of multimedia resources, (5) research, from various countries, should be presented such that the knowledge gained from these studies can be used to enable educators to improve their own teaching material and methods of delivery. It was agreed by all that further research into how students learn statistics would be advantageous and that new innovative ways of teaching statistics is desirable.

One of the main issues that came out of the conference is the use of new technology. The way in which statistical understanding may be effected by the use of new technology was discussed to determine whether or not this technology, which has been developed according to certain pedagogic principals, is proving to be effective medium of instruction. Papers at the ICME9 conference highlighted issues associated with the use of this new technology as a method of instruction. Much of the work that has been carried out in this areas focuses on students who have little or no formal instruction in statistics, however, the findings are appropriate to student who are following courses in mathematics and/or statistics.

A well attended topic group with much food for thought being presented and a lively discussion took place with the delegates. It was certainly appropriate that the IASE is involved in these statistics sessions at ICME conferences. There is a keen interest by dele-

gates in statistics and statistical education. Hopefully in the year 2004 the next ICME conference will have more sessions in this area.

**IASE Round Table Conference on Training Researchers in the Use of Statistics, Japan, Tokyo, August 7-11, 2000**

*Carmen Batanero, Facultad de Educación, Universidad de Granada, Spain, batanero@goliat.ugr.es.*

This was a very productive conference held at The Institute of Statistical Mathematics, Tokyo, August 7-11, 2000. Some 45 speakers, discussants and observers representing 16 developing and developed countries met. The *IASE* is very grateful to the support received from the *ISI*, the *Japan Statistical Society* and the *Institute of Statistical Mathematics* as well as to the work by the referees and the local and scientific committees.

The 24 papers presented and discussions by 8 reactors suggested the variety and complexity of statistical topics currently needed for research in almost all areas of knowledge. It was shown that statistics is misunderstood and misused by researchers, that they do not fully grasp the essence of statistical thinking and do not sufficiently appreciate the role of statistics in the research process. Some surveys also confirmed potential conflicts between the use of non-standard statistical methods in applied research in terms of acceptance by referees and journals. It was emphasised that it is unrealistic to expect researchers to solve all their data analysis problems without any help from statisticians. According to the findings of different surveys carried out by the RTC participants researchers are aware of this situation.

Technology is creating new didactical problems such as the teaching of techniques to deal with mass-data, the need to make researchers conscious of the ethical issues related to the use of institutional data, and the danger in misusing statistical software. Technology is also offering didactical possibilities, such as the Internet, which is interactive, widely accessible, flexible and provides a variety of resources to help researchers.

Future statisticians feel they lack abilities for communicating with clients and managing a consulting session. The relevance of making statisticians better acquainted with other research fields for assuring an optimal communication among statisticians and researchers was also made clear. Consultancy practices carried out by students is a didactical device that is used as a mean for both providing practical experience to future statisticians and creating a culture favourable to value statistical consultancy in future researchers.

We discussed the main abilities to be emphasised in the training of researchers and there was an agree-

ment that successful courses will encourage a critical attitude towards data and statistical analyses and stress the importance of obtaining good quality data. Methodology for such courses should be based on encouraging participation and interaction, and working with data set in their own research areas. Finally we were glad to know the role played by local associations of statistics education, research resources centres and international projects in solving big challenges such as the training of a huge number of statisticians, and the training of researchers who work in isolation in very widespread geographical areas.

The papers presented are now being revised and a monograph will be available next year including the starting document, papers and discussions and a summary of the main conclusions. More information is available from

Carmen Batanero, Facultad de Educación, Universidad de Granada, Spain, batanero@goliat.ugr.es.

**IASE SERN and SERG  
Statistical Education Research Newsletter and Statistical Education Research Group**

This year the IASE was glad to present this first issue of the IASE Statistical Education Research Newsletter a new IASE publication, which continues the previous Newsletter of the International Study Group for Research on Learning Probability and Statistics. The International Study Group for Research on Learning Probability and Statistics was first started informally at ICOTS-1 and was running in a rather informal way conducted by David GREEN (1982-87), Joan GARFIELD (1988-95) and Carmen BATANERO (1996-99). More information about this group as well as all the Newsletters produced since 1996 to 1996 is available from the web site:

<http://www.ugr.es/local/batanero/>

From January 2000, the group was accepted as a special interest group within the IASE with the name IASE Statistical Education Research Group, and is also open to all who share our common interest in carrying out research into the teaching and learning of statistics and probability. The main activity this year has been producing the SERN newsletter, which is located at [www.ugr.es/local/batanero/sergroup.htm](http://www.ugr.es/local/batanero/sergroup.htm). Carmen Batanero (batanero@goliat.ugr.es), Joan Garfield (jbg@tc.umn.edu), M. Gabriella Ottaviani (ottaviani@pow2.sta.uniroma1.it) and John & Kath Truran (truranjk@camtech.net.au) are members of the editorial committee. Their aim is to make SERN a tool of potential interest to researchers, and, therefore they are publishing short notes, summaries of papers, dissertations and research works, information about

internet resources of interest, past and future conferences and bibliographies on particular research topics. The extent to which a research newsletter is useful depends of the quality and completeness of the information published. We need of your collaboration and we encourage you to send any type of information about your research projects and results that you consider of interest for other colleagues to one of the editors.

### HONORARY MEMBERS

The IASE statutes were recently modified to include the possibility of nominating Honorary Members as a way of recognising the work and dedication of some of our members. The IASE Executive Committee approved the nominations of both David MOORE and Anne HAWKINS, who were our first two presidents in the crucial period of the establishment of the IASE and whose work has contributed significantly to the success and growth of our Association. Some details of their outstanding contributions to statistical education can be seen in the web site

<http://www.swin.edu.au/math/iase/people.html>

### IASE PUBLICATIONS

The IASE regularly has publications relating to its activities. As mentioned above, some to this year's meetings will have their proceedings published. In particular the proceedings of the IASE Round Table Conference on Training Researchers in the Use of Statistics and the ISEC Jubilee celebrations are due out early next year. Proceedings of past conferences and other important aspects of statistical education can be found on

<http://www.swin.edu.au/math/iase/publications.html>

The organisers of ICOTS-5 have excess sets of the ICOTS-5 proceedings (Proceedings of the Fifth International Conference on Teaching Statistics, Singapore, June 21-26, 1998) many of which they will have to dump by the end of November if not ordered very soon. You can check the contents at

<http://www.nie.ac.sg:8000/~wwwmath/THEFINAL.html>

They are happy to send them to anyone interested for the cost of postage and handling. This works out at \$US30 for sea mail. If your library has not got a set, or you know anyone who would like one please do the following: Send your requests to Lionel Pereira-Mendoza [lpereira@nie.edu.sg](mailto:lpereira@nie.edu.sg)

### SUMMARY OF UPCOMING STATISTICS EDUCATION CONFERENCES

<http://www.swin.edu.au/math/iase/conferences2.html>

January 2-5, 2001, **7th Islamic Countries Conference on Statistical Sciences**: "Challenges of the 21st Century", Lahore, Pakistan. Topics for statistics education. Conference Secretariat: Faculty of Mathematical Sciences, University of Lahore, 1-K.M. Raiwind, Lahore, Pakistan, Tel: +92-42-5411901/5411905/5411917/5411986, Fax: +92-42-5413036, [drmunir@brain.net.pk](mailto:drmunir@brain.net.pk)

April 19 -21, 2001, **Symposium** in Honour of Emeritus Professor David Vere-Jones Victoria University of Wellington, New Zealand

July 12-17, 2001, The **25th PME** conference will be held at Utrecht University, the Netherlands. Following the PME25 Conference, a **Summer School** will be organized by the Freudenthal Institute. Further information: <http://www.fi.uu.nl/pme25> or contact Marja van den Heuvel-Panhuizen [m.vandenheuvel@fi.uu.nl](mailto:m.vandenheuvel@fi.uu.nl)

August 15-20, 2001, **The Second International Research Forum on Statistical Reasoning, Thinking and Literacy SRTL-2** University of New England, Armidale, Australia

August 21-22, 2001, **IASE Satellite meeting** - Statistical Literacy Satellite to ISI, Seoul, Korea

August 22-29, 2001, **53rd Session of the ISI Seoul**, Korea IASE Sessions at ISI-53

June 2002. The second **ICMI-EARCOME** (East Asia Regional Conference on Mathematics Education) Singapore. Information can be obtained from EARCOME 2002, Division of Mathematics, National Institute of Education, 469 Bukit Timah Road, Singapore 259756, Republic of Singapore, [earcome2@nie.edu.sg](mailto:earcome2@nie.edu.sg).

July 7-12, 2002, International Conference on Teaching Statistics **ICOTS-6** Durban, South Africa

2003, **54th Session of the ISI Berlin**, IASE Sessions at ISI-54. IASE Programme Committee (chair) Gilberte Schuyten [gilberte.schuyten@rug.ac.be](mailto:gilberte.schuyten@rug.ac.be)